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DEC 17 2015

DEQ-FAYETTEVILLE REGIONAL OFFICE



East Coast Environmental, P.A.

3815 Junction Boulevard Raleigh, NC 27603
(919) 772-0268 F (919) 772-0468

December 15, 2015

Mr. Jeremy Poplawski
NCDENR-Fayetteville Office
UST Section
225 Green Street, Suite 714
Fayetteville, NC 28301

Re: Comprehensive Site Assessment prepared for
The Grocery Bag
Highway 42 Clayton, North Carolina (Site)
Incident # 29602

Dear Mr. Poplawski,

This correspondence is to present to you one copy of the Comprehensive Site Assessment (CSA) requirement by your previous.

Should you have any questions, comments, or require additional information, please feel free to contact me at your earliest opportunity.

Cordially,
East Coast Environmental, P.A.

A handwritten signature in cursive script, appearing to read 'Tom Will'.

Tom Will
Project Manager
Attachment(s)

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**COMPREHENSIVE SITE ASSESSMENT
PREPARED IN RESPONSE TO A LEAKING
UNDERGROUND STORAGE TANK AT THE:
GROCERY BAG
4879-A HIGHWAY 42 EAST
CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA
FACILITY I.D. 0-032284
GROUNDWATER INCIDENT NUMBER: 29602**

December 14, 2015

Responsible Party:

Grocery Bag CITGO
c/o Tommy Fitzgerald
4879-A Highway 42 East
Clayton, North Carolina 27520
(919) 553-4088

Current Property Owner:

Percy Flowers Store, LLC
4880 NC 42 East
Clayton, NC 27520
(919) 553-3084

Consultant:

East Coast Environmental, P.A.
3815 Junction Blvd.
Raleigh, North Carolina 27603
(919) 772-0268

Release Discovery Date: September 2009

Cause of Release: Leaking flex pipe connector in 12,000 UST sump

UST Sizes and Contents: (2) 8,000-Gallon Gasoline USTs, (1) 12,000-Gallon Gasoline UST

Latitude: 35° 39.247', Longitude: 78° 20.674'



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Latitude: 35° 39.247', Longitude: 78° 20.674'

Comprehensive Site Assessment

A SITE INFORMATION

A.1 Site Identification

Date of Report: December 14, 2015
Facility I.D.: 0-032284
Site Name: The Grocery Bag
Site Address: 4879-A Highway 42 East
Nearest City/Town: Clayton
Location Method: Topographic Maps/GPS
Latitude: 35° 39.247'

UST Incident Number: 29602

County: Johnston

Longitude: 78° 20.674'

A.2 Contact Information

UST Owner: The Grocery Bag CITGO c/o Tommy Fitzgerald
Address: 4879-A Highway 42 East, Clayton, NC 27520
Phone: (919) 553-4088

UST Operator: The Grocery Bag CITGO c/o Tommy Fitzgerald
Address: 4879-A Highway 42 East, Clayton, NC 27520
Phone: (919) 553-4088

Property Owner: Percy Flowers Store, LLC
Address: 4880 NC 42 East, Clayton, NC 27520
Phone: (919) 553-3084

Property Occupants: The Grocery Bag CITGO c/o Tommy Fitzgerald
Address: 4879-A Highway 42 East, Clayton, NC 27520
Phone: (919) 553-4088

Consultant/Contractor: East Coast Environmental, P.A.
Address: 3815 Junction Blvd., Raleigh, NC 27603
Phone: (919) 772-0268

Analytical Laboratory: Environmental Conservation Laboratories
Address: 102-A Woodwinds Industrial Court, Cary, NC 27511
Phone: (919) 467-3090

A.3 Release Information

Date Discovered: September 2009
Estimated Quantity of Release: unknown
Cause of Release: Leaking flex pipe connector in 12,000 UST sump
Source of Release (e.g., Piping/UST): Piping
Sizes and contents of UST system(s) from which the release occurred: (1) 12,000-gallon gasoline

I, Thomas R. Will a Licensed Geologist for East Coast Environmental, P.A. do certify that the information contained in this report is correct and accurate to the best of my knowledge.

East Coast Environmental, P.A. is licensed to practice geology in North Carolina. The certification number for East Coast Environmental, P.A. is C-136

B EXECUTIVE SUMMARY

The subject property (hereinafter is referred to as the “Site”) is identified as the Grocery Bag and is located at 4879-A Highway 42 East, Clayton, Wake County, North Carolina (See **Section A, Figure 1** for Site location.) The Site consists of an approximately 2.60 acre parcel of land owned by Percy Flowers Store, LLC and is currently occupied by the Grocery Bag. The current property owner (Percy Flowers Store, LLC) has owned the property since January 2008.

The Site contains three petroleum Underground Storage Tank (UST) systems that were installed for the retail sale of gasoline. The Site’s UST systems were installed during 1993 and included two 8,000 gallon gasoline tanks and one 12,000 gallon gasoline tank that are currently registered as being owned by the Grocery Bag. See **Section A, Figure 2** for the Site map indicating UST system locations.

East Coast Environmental P.A. (ECE) mobilized to the Site on September 3, 2009 for the purpose of performing a Site check. The suspected release was located on top of the 12,000 gallon tank and therefore it was determined that groundwater samples should be collected in areas as close to the tank as possible in lieu of the collection of samples adjacent to the product lines and dispensers.

Analytical results for the groundwater samples submitted by ECE for laboratory analysis by EPA method 6200B detected targeted volatile organic compounds at concentrations in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202. The presence of petroleum related contaminants at elevated levels indicated that a petroleum release had occurred. However, the source of the petroleum release (leaking flex connector in 12,000 gallon UST sump) was identified and repaired.

In response, the North Carolina Department of Environment and Natural Resources-Fayetteville Regional Office (NCDENR-FaRO) issued a October 6, 2009 Notice of Regulatory Requirements letter to Mr. Tommy Fitzgerald of the Grocery Bag directing them to comply with the requirements of 15A NCAC 2L .0405.

ECE mobilized to the Site on November 2, 2009 in order to install one groundwater monitoring well (MW-1) at the southeast corner of the leaking UST on November 2, 2009 for completion of a Phase I Limited Site Assessment. One boring (finished as monitoring well MW-1) was installed using 3.25-inch diameter hand auger to a depth of 10-feet below land surface and located as shown in **Section A, Figure 2**.

Groundwater samples were collected from MW-1 and transported to the laboratory for analysis by EPA Methods 6200B, 3030c, 504.1 and for the MADEP-VPH analysis. Data for the groundwater samples collected from MW-1 on November 3, 2009 and analyzed by EPA Method 6200B, 504.1, MADEP-VPH and 3030c

detected numerous targeted contaminants at levels in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202.

After review of the Phase I LSA the NCDENR issued a Notice of Regulatory Requirements letter dated September 29, 2014 to Mr. Tommy Fitzgerald of the Grocery Bag directing him to complete this CSA as required in 15A NCAC 2L .0407(c).

B.1 Initial Abatement/Emergency Response Information

A release from a UST system was suspected when water containing a petroleum sheen was observed in a manhole sump located on top of the 12,000 gallon gasoline tank. Further, a leaking flexible pipe connector was discovered in the 12,000 gallon gasoline UST sump and subsequently repaired. After the repairs were completed the system was retested and found to be “tight”.

B.2 Receptor Information

ECE completed a walkthrough of all properties located within a 1,000 foot radius of the Site during 2009 as part of the Phase I LSA. The well survey identified three water supply wells located within a 1,000 foot radius of the release area. All wells were subsequently taken out of use in order to lower incident risk so there are no longer any supply wells known to exist within a 1,000 foot radius of the source area. **Figure 1** in **Section A** indicates approximate former water supply well locations while **Table 5** in **Section B** describes the well owners and known supply well construction information.

There are two ponds located within 500-feet of the release area. Their exact locations can be found in **Section A, Figure 1**.

Finally, the source is not located within a wellhead protection area but within the Coastal Plain Physiographic province. Also, land use at the Site and surrounding areas is a combination of agricultural, residential and commercial purposes.

B.3 Sampling/Investigation Results

Site Check (September 2009)

ECE mobilized to the Site on September 3, 2009 for the purpose of performing the Site check. As stated previously, the suspected release was located on top of the 12,000 gallon tank and therefore it was determined

that soil/groundwater samples should be collected in areas as close to the tank as possible in lieu of the collection of samples adjacent to the product lines and dispensers. Because groundwater was found to be close to land surface ECE decided to collect a series of groundwater samples from three observation wells located adjacent to the tanks. Therefore, all three of the observation wells (OW-1, OW-2 and OW-3) were purged for approximately 20 minutes a piece using a Grundfos submersible electric pump prior to sampling. After the wells were adequately purged groundwater samples were collected from all three wells and submitted for laboratory analysis by EPA Method 6200B for volatile organic compounds.

Analytical results for the groundwater samples submitted by ECE for laboratory analysis by EPA method 6200B detected numerous targeted constituents in all three groundwater samples. ECE's groundwater samples designated as OW-1, OW-2 and OW-3 were all found by laboratory analysis to contain targeted volatile organic compounds at concentrations in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202. The presence of petroleum related contaminants at elevated levels does indicate that a petroleum release had occurred. However, the source of the petroleum release (leaking flex connector in 12,000 gallon UST sump) has been identified and repaired.

In response, the North Carolina Department of Environment and Natural Resources-Fayetteville Regional Office (NCDENR-FaRO) issued a October 6, 2009 Notice of Regulatory Requirements letter to Mr. Tommy Fitzgerald of the Grocery Bag directing them to comply with the requirements of 15A NCAC 2L .0405.

Mr. Fitzgerald responded by contracting with ECE in order to complete a Phase I Limited Site Assessment (LSA) report.

Phase I Limited Site Assessment Activities (November 2009)

ECE mobilized to the Site on November 2, 2009 for the purpose of conducting field assessment activities necessary to determine a "worse case scenario" for the presence of petroleum contamination in the soils and groundwater on the Site. In conducting this assessment, ECE installed one hand augured soil boring designated as MW-1 southeast of the leaking UST for completion of a Phase I LSA. The boring was advanced close to the southeast corner of the 12,000 gallon gasoline UST in native soils which is the area down-gradient of OW-1 and OW-3 that showed the highest levels of petroleum contamination in the previously completed Site Check. The boring (finished as monitoring well MW-1) was installed using 3.25-inch diameter hand auger to a depth of 10-feet below land surface. It was completed as MW-1 using 2-inch I.D. Schedule 40 PVC riser from land surface to a depth of 3-feet below land surface followed by 2-inch I.D. Schedule 40 well screen from 3 to 10-feet below land surface. The PVC well screen length was placed at such a depth that it would straddle the water table so

the target contaminant (gasoline) could be effectively monitored. MW-1 is located as shown in **Section A, Figure 2.**

One soil sample was collected from MW-1 at a depth of 2-feet below land surface and submitted to Environmental Conservation Laboratories, Inc. of Cary NC (NCDENR-DWQ certification # 591) for laboratory analysis by EPA Methods 8260 the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbon (VPH) analyses.

The analytical results for EPA Methods 8260 revealed the presence of two parameters (benzene and MTBE) at detectable levels. However, none of these were detected at concentrations in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations as set forth in the “*Guidelines for Assessment and Corrective Action for UST releases, July 15, 2008 version, Change 2 effective October 1, 2012*” prepared by the North Carolina Underground Storage Tank Section (*The Guidelines*)

Finally, the analytical results for the MADEP VPH test did not detect the presence of C5-C8 aliphatics, C9-C12 aliphatics and C9-C10 aromatics. Therefore, none of these were detected at levels in excess of their Soil to Groundwater Maximum Soil Contaminant Concentration as set forth in *The Guidelines*. A summary of these soil analytical results is included in **Table 3** in **Section B.**

The following day ECE developed and sampled MW-1. Prior to development, the water level in the well was measured through gauging with an electronic water level indicator to be at a depth of 3.13-feet below land surface. Next, the well was developed of approximately three volumes using a new disposable PVC bailer.

Groundwater samples were collected from MW-1 using a bailer and immediately placed into the appropriate laboratory supplied bottles. Next, the samples were transported to the laboratory for analysis by EPA Methods 6200B, 3030c, 504.1 and for the MADEP-VPH analysis.

Data for the groundwater samples collected from MW-1 on November 3, 2009 and analyzed by EPA Method 6200B, 504.1 and 3030c detected numerous targeted contaminants at levels in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202.

Data for the MADEP-VPH analyses detected C5-C8 aliphatics, C9-C12 aliphatics and C9-C10 aromatics at levels in excess of excess of their maximum allowable concentrations in groundwater as set forth in 15A NCAC 2L .0202.

After review of the Phase I LSA the NCDENR issued a Notice of Regulatory Requirements letter dated September 29, 2014 to Mr. Tommy Fitzgerald of the Grocery Bag directing him to complete this CSA as required in 15A NCAC 2L .0407(c).

Comprehensive Site Assessment Groundwater Investigation

March 2015 Groundwater Monitoring Event

The next groundwater sampling event occurred between March and October 2015 after the NCDENR instructed Mr. Fitzgerald to complete this CSA. ECE mobilized to the Site on March 12-13, 2015 in order to install four additional permanent monitoring wells designated as MW-2, MW-3, MW-4 and MW-5 all of which were located on-Site. A summary of the well construction details are included in **Section B Table 5** while the well construction logs are included in **Section C**. ECE returned to the Site on March 18, 2015 in order to sample the five monitoring wells installed to date for inclusion in this CSA. This time the groundwater samples collected from the monitoring wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH methods.

Data for the groundwater samples revealed the presence of targeted compounds in the samples collected from all five groundwater monitoring wells. Samples collected from these wells were also found to contain one or more targeted contaminants at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

The results for this groundwater sampling event showed that the extent of the groundwater contaminant plume was not adequately defined in the horizontal directions.

May 17, 2015 Groundwater Monitoring Event

The next phase of groundwater sampling was conducted during May 2015 for completion of the CSA included the installation of additional monitoring wells MW-6 and MW-7 at on-Site locations. A summary of the well construction details are included in **Section B Table 5** while the well construction logs are included in **Section C**. These wells were required after reviewing the results for the March 2015 monitoring event which revealed that the groundwater contaminant plume may have migrated offsite and under NC 42 to the south. Therefore, in order to complete the CSA groundwater samples were subsequently collected from monitoring wells MW-6 and MW-7 after their installation. The groundwater samples collected from the monitoring wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH method. Analytical results for the samples collected from MW-6 showed no

contaminants targeted by any of these test methods while the samples collected from MW-7 showed numerous targeted contaminants at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202. The analytical results for this sampling event confirms that the groundwater contaminant plume has migrated offsite and under NC 42 to the south and also defined its extent to the east..

In summary, as of May 2015 data for the groundwater samples obtained from wells MW-1, MW-3, MW-4, MW-5 and MW-7 showed the presence of targeted volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202. Analytical results for the samples collected from MW-2 and MW-6 were all below their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

September/October 2015 Soil and Groundwater Monitoring Event

ECE mobilized to the Site on October 22, 2015 for the purpose of conducting field assessment activities necessary to complete assessment of the petroleum contamination in the soils of the Site. In conducting this assessment, ECE advanced a series of six soil borings on October 22, 2015. Soils encountered while completing the soil borings consisted of dry to moist orange-brown clay to 5-feet below land surface. This time the soil samples were collected for laboratory analysis at a depth of 2 to 3-feet below land surface. The borings were located and installed in order to surround the suspected contaminant source area (UST systems). The exact locations of these six soil borings are shown in **Section A, Figure 2**.

These samples were submitted to Environmental Conservation Laboratories or Cary, NC (NCDENR-DWQ certification # 591) for laboratory analysis by EPA Methods 8260 and the MADEP-VPH analyses.

The analytical results for EPA Method 8260 revealed the presence of numerous parameters at detectable levels in the soil samples identified as S-1 through S-6. Further, the results for soil samples S-1, S-3, S-4 and S-6 also revealed one or more parameters at levels in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations (MSCCs) as set forth in *The Guidelines*.

The analytical results for the MADEP-VPH tests detected the presence of C5-C8 aliphatics, C9-C18 aliphatics or C9-C22 aromatics in samples S-1, S-3 or S-6 at concentrations in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations (MSCCs) as set forth in *The Guidelines*.

Further samples S-1 and S-6 were also found to contain C9-C22 aromatics at levels in excess of their Residential MSCCs as set forth in *The Guidelines*. A summary of these soil analytical results is included in **Table 3 in Section B** while the laboratory report can be found in **Section E**.

This final phase of groundwater sampling was conducted during September and October 2015 for completion of the CSA and included the installation of shallow wells MW-8, MW-9 and MW-10 and also deep profile well DW-1. MW-8 was installed on-Site in order to define the western extent of groundwater contamination while MW-9 and MW-10 were installed off-Site and south of NC 42 to define the downgradient extent of groundwater contamination. Finally, DW-1 was installed on-Site and adjacent to MW-7 at the location indicated in **Figure 2** in order to define the horizontal and vertical extent of groundwater contamination. Therefore, in order to complete the CSA groundwater samples were subsequently collected from monitoring wells MW-8, MW-9, MW-10 and DW-1. The groundwater samples collected from these monitoring wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH method. Analytical results for the groundwater samples obtained from wells MW-8 and MW-9 showed the presence of targeted volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

In summary, data for the groundwater samples obtained from wells MW-1, MW-3, MW-4, MW-5, MW-7, MW-8 and MW-9 showed the presence of volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202 and 10 times the 15A NCAC 2B Standards.

Isoconcentration maps for numerous contaminants have been prepared and can be found in **Section A, Figures 3 through 5**. **Section B, Table 4** is a summary of the combined groundwater analytical results for all of the sampling events. Laboratory reports for the March, May, September and October sampling events are presented in **Section E**.

Upon review of the data obtained by the CSA activities described above, it is evident that the horizontal and vertical extent of the groundwater contaminant plume has been adequately defined to the 15A NCAC 2L standards for groundwater and 10 times the surface water standards wet forth at 15A NCAC 2B.

B.4 Site Specific Conditions Related to Risk Classification

Currently the Site is classified as “Intermediate Risk” due to the presence of two ponds located within a 500 foot radius of the release area. See **Figure 2** for surface water sample location. As part of this CSA a representative surface water sample was also collected from the pond located across Highway 42 to the south of the Site and the sample submitted for volatile organic compound analysis by EPA Method 6200b. Analytical results for the surface water sample showed no targeted volatile organic compounds at detectable levels with the exception of toluene at a concentration of 0.42 ug/l. However, it should also be noted that at this time there is no cost

effective way to lower the current risk classification from “intermediate” to “low” because there is no way to remove the nearby surface water bodies.

B.5 Conclusions/Recommendations

Petroleum constituents in the Site’s soils and groundwater have migrated from the source area. This is likely due to the solubility of the primary petroleum contaminant (gasoline) and the sandy subsurface soil layer encountered at approximately 12 feet below land surface during the assessment that has fairly high permeability characteristics. Because groundwater contamination has been measured in samples collected from monitoring well MW-9 located off-Site and adjacent to a nearby surface water body the presence of petroleum contaminants in the groundwater sample indicate that gasoline related contaminants are likely being discharged with groundwater into the pond located across NC 42 and south of the Site.

Based on information compiled while completing this CSA, the incident will continue to be classified as “intermediate risk”. Further, there currently is no available means to eliminate the receptors (i.e. nearby ponds). Therefore, it is likely that the incident will continue to be ranked as “intermediate risk” and that a corrective action plan may be required to be developed in the future.

ECE recommends that Tommy Fitzgerald submit a copy of this CSA to the NCDENR-DWM, UST Section Raleigh Regional Office to the attention of Mr. Jeremy Poplawski.

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C SITE HISTORY AND SOURCE CHARACTERIZATION

The subject property (hereinafter is referred to as the “Site”) is identified as the Grocery Bag and is located at 4879-A Highway 42 East, Clayton, Wake County, North Carolina (See **Section A, Figure 1** for Site location.) The Site consists of an approximately 2.60 acre parcel of land owned by Percy Flowers Store, LLC and is currently occupied by the Grocery Bag. The current property owner (Percy Flowers Store, LLC) has owned the property since January 2008.

The Site contains three petroleum Underground Storage Tank (UST) systems that were installed for the retail sale of gasoline. The Site’s UST systems were installed during 1993 and included two 8,000 gallon gasoline tanks and one 12,000 gallon gasoline tank that are currently registered as being owned by the Grocery Bag. See **Section A, Figure 2** for the Site map indicating UST system locations.

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In response, the North Carolina Department of Environment and Natural Resources-Fayetteville Regional Office (NCDENR-FaRO) issued a October 6, 2009 Notice of Regulatory Requirements letter to Mr. Tommy Fitzgerald of the Grocery Bag directing them to comply with the requirements of 15A NCAC 2L .0405.

ECE mobilized to the Site on November 2, 2009 in order to install one groundwater monitoring well (MW-1) at the southeast corner of the leaking UST on November 2, 2009 for completion of a Phase I Limited Site Assessment. One boring (finished as monitoring well MW-1) was installed using 3.25-inch diameter hand auger to a depth of 10-feet below land surface and located as shown in **Section A, Figure 2**.

After review of the Phase I LSA the NCDENR issued a Notice of Regulatory Requirements letter dated September 29, 2014 to Mr. Tommy Fitzgerald of the Grocery Bag directing him to complete this CSA as required in 15A NCAC 2L .0407(c).

Assessment Activities Completed to Date

Site Check Activities (September 2009)

East Coast Environmental P.A. (ECE) mobilized to the Site on September 3, 2009 for the purpose of performing the Site check. As stated previously, the suspected release was located on top of the 12,000 gallon tank and therefore it was determined that soil/groundwater samples should be collected in areas as close to the tank as possible in lieu of the collection of samples adjacent to the product lines and dispensers. Because groundwater was found to be close to land surface ECE decided to collect a series of groundwater samples from three observation wells located adjacent to the tanks. Therefore, all three of the observation wells (OW-1, OW-2 and OW-3) were purged for approximately 20 minutes a piece using a Grundfos submersible electric pump prior to sampling. After the wells were adequately purged groundwater samples were collected from all three wells and submitted for laboratory analysis by EPA Method 6200B for volatile organic compounds.

Analytical results for the groundwater samples submitted by ECE for laboratory analysis by EPA method 6200B detected targeted numerous targeted constituents in all three groundwater samples. ECE's groundwater samples designated as OW-1, OW-2 and OW-3 were all found by laboratory analysis to contain targeted volatile organic compounds at concentrations in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202. The presence of petroleum related contaminants at elevated levels does indicate that a petroleum release had occurred. However, the source of the petroleum release (leaking flex connector in 12,000 gallon UST sump) has been identified and repaired.

In response, the North Carolina Department of Environment and Natural Resources-Fayetteville Regional Office (NCDENR-FaRO) issued a October 6, 2009 Notice of Regulatory Requirements letter to Mr. Tommy Fitzgerald of the Grocery Bag directing them to comply with the requirements of 15A NCAC 2L .0405.

Mr. Fitzgerald responded by contracting with East Coast Environmental, P.A. (ECE) in order to complete a Phase I Limited Site Assessment (LSA) report.

Phase I Limited Site Assessment Activities (November 2009)

ECE mobilized to the Site on November 2, 2009 for the purpose of conducting field assessment activities necessary to determine a "worse case scenario" for the presence of petroleum contamination in the soils and groundwater on the Site. In conducting this assessment, ECE installed one hand augured soil boring designated as MW-1 at the southeast corner of the leaking UST for completion of the Phase I LSA. The boring was advanced close to the southeast corner of the 12,000 gallon gasoline UST in native soils which is the area down-gradient of OW-1 and OW-3 that showed the highest levels of petroleum contamination in the previously

completed Site Check. The boring (finished as monitoring well MW-1) was installed using 3.25-inch diameter hand auger to a depth of 10-feet below land surface. It was completed as MW-1 using 2-inch I.D. Schedule 40 PVC riser from land surface to a depth of 3-feet below land surface followed by 2-inch I.D. Schedule 40 well screen from 3 to 10-feet below land surface. The PVC well screen length was placed at such a depth that it would straddle the water table so the target contaminants (petroleum products) could be effectively monitored. MW-1 is located as shown in **Section A, Figure 2**.

One soil sample was collected from MW-1 at a depth of 2-feet below land surface and submitted to Environmental Conservation Laboratories, Inc. of Cary NC (NCDENR-DWQ certification # 591) for laboratory analysis by EPA Methods 8260 the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbon (VPH) analyses.

The analytical results for EPA Methods 8260 revealed the presence of two parameters (benzene and MTBE) at detectable levels. However, none of these were detected at concentrations in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations as set forth in the “*Guidelines for Assessment and Corrective Action for UST releases, July 15, 2008 version, Change 2 effective October 1, 2012*” prepared by the North Carolina Underground Storage Tank Section (*The Guidelines*.)

Finally, the analytical results for the MADEP-VPH test did not detect the presence of C5-C8 aliphatics, C9-C12 aliphatics and C9-C10 aromatics. Therefore, none of these were detected at levels in excess of their Soil to Groundwater Maximum Soil Contaminant Concentration as set forth in *The Guidelines*. A summary of these soil analytical results is included in **Table 3** in **Section B**.

The following day ECE developed and sampled the well. Prior to development, the water level in the well was measured through gauging with an electronic water level indicator to be at a depth of 3.13-feet below land surface. Next, the well was developed of approximately three volumes using a new disposable PVC bailer.

Groundwater samples were collected from MW-1 using the bailer and immediately placed into the appropriate laboratory supplied bottles. Next, the samples were transported to the laboratory for analysis by EPA Methods 6200B, 3030c, 504.1 and for the MADEP-VPH analysis. Data for the groundwater samples collected from MW-1 on November 3, 2009 and analyzed by EPA Method 6200B, 504.1 and 3030c detected numerous targeted contaminants at levels in excess of their maximum allowable levels in groundwater as set forth in 15A NCAC 2L .0202.

Data for the MADEP-VPH analyses detected C5-C8 aliphatics, C9-C12 aliphatics and C9-C10 aromatics at levels in excess of excess of their maximum allowable concentrations in groundwater as set forth in 15A NCAC

2L .0202. After review of the Phase I LSA the NCDENR issued a Notice of Regulatory Requirements letter dated September 29, 2014 to Mr. Tommy Fitzgerald of the Grocery Bag directing him to complete this CSA as required in 15A NCAC 2L .0407(c).

D RECEPTOR INFORMATION

D.1 Water Supply Wells

Currently Johnson County supplies water through buried pipelines to all properties located within 1,000 feet of the Site. However, during 2009 ECE also completed a walk through of all properties located within a 1,000 foot radius of the Site. A well survey completed by ECE for the Phase I LSA identified three water supply wells located within a 1,000 foot radius of the release area. Only one of these three wells was being used as a potable water supply at that time. The second well located on the eastern side of the pond across NC 42 was out of use and the property connected to county water. The third well located at the office building south of the Site was also out of use. **Figure 1** in **Section A** indicates approximate water supply well locations while **Table 5** in **Section B** describes the well owners and known supply well construction information. In order to lower Site risk all three of these wells were subsequently abandoned during late 2009.

D.2 Public Water Supplies

Johnston County has available water supplies to all properties located within a 1,000-foot radius of the Site.

D.3 Surface Water

There are two ponds located within 500-feet of the release area. Their exact locations can be found in **Section A, Figure 1**.

D.4 Wellhead Protection Areas

On December 16, 2009 ECE reviewed the NCDENR-Wellhead Protection Program files for the presence of wellhead protection areas within 1,500-feet of the Site. None were found to be located within 1,500-feet of the source area.

D.5 Deep Aquifers in the Coastal Plain Physiographic Region

The Site is located within the Coastal Plain Physiographic Region as defined by the Geologic Map Of North Carolina, 1985, published by the *Department of Natural Resources and Community Development, Division of Land Resources, North Carolina Geologic Survey*.

The Site and eastern Johnston County lie east and south of the “fall zone” which is considered to be the border between the Piedmont and Coastal Plain Physiographic Provinces. East and south of the fall zone the surficial terraced deposits thicken to the southeast over an irregular basement of crystalline rock consisting largely of granite, mica gneiss, schist and slate in northern Johnston County. The primary water bearing aquifers in the area include the surficial terrace deposits and upland sediment and the underlying weathered crystalline rock. Bored and dug wells in the area generally obtain their water from the terrace deposits while drilled wells typically tap the underlying weathered crystalline rock. Dug and bored wells are generally less than 40-feet deep and typically yield between 2 and 15-gallons of water per minute. Drilled wells tapping the underlying crystalline rock yield between 20 and 35-gallons of water per minute.

D.6 Subsurface Structures

There are no known subsurface structures located on the Site

D.7 Land Use

Adjacent property ownership is as follows: The immediately adjacent property located north of the Site contains a pond and is owned by Rebecca D Flowers. All of the adjacent properties are owned by Rebecca D Flowers. The property located southeast of the Site and across Highway 42 contains a pond as well. The property located south of the Site and across Highway 42 contains an office and residence. The property located southwest of the Site and across the intersection of highway 42 and Buffalo road is a vacant wooded lot. The property located across Buffalo road is currently vacant but is being developed for a shopping center. The Site itself is owned by Percy Flowers Store LLC and contains a multi-use building used for office/business space and apartments. See **Section B, Table 2** for more detailed information regarding adjacent property owners.

E SITE GEOLOGY AND HYDROGEOLOGY

The Soil Survey of Johnston County, North Carolina¹ identifies the soils of the Site as belonging to the Norfolk Urban Land Complex. This unit consists of the well drained Norfolk soils and urban land. The Norfolk soils and urban land occur as areas so intricately mixed that mapping them separately was not feasible. Typically, the surface layer is yellowish brown sandy loam 5-inches thick. The subsoil is more than 56 inches thick. The upper 12-inches of subsoil is yellowish-brown sandy clay loam. The next 32-inches is yellowish brown sandy clay loam that has yellowish red mottles. The next 16-inches is yellowish brown clay loam that has red and gray mottles. The lower 12-inches is mottled yellowish red and yellowish brown sandy clay loam.

The Geologic Map of North Carolina² describes the area where the Site is located as being underlain by the Yorktown Formation of the Coastal Plain Physiographic Province. The Geologic Map further describes the Yorktown Formation as “fossiliferous clay with varying amounts of fine grained sand, bluish gray, shell material commonly concentrated in lenses”.

Soils encountered while completing the temporary monitoring well installed for the Phase I LSA consisted of wet, tan-gray clayey sand to 4-feet below land surface (bls). From 4 to 8-feet bls the material became a black gray moist mottled clay. From 8 to 10-feet bls a wet tan-gray sandy silt was encountered.

Regional Hydrogeology

As stated previously, the primary water bearing aquifers in the area include the surficial terrace deposits and upland sediment and the underlying weathered crystalline rock. Bored and dug wells in the area generally obtain their water from the terrace deposits while drilled wells typically tap the underlying weathered crystalline rock. The dug and bored wells are generally less than 40-feet deep and typically yield between 2 and 15-gallons of water per minute. Drilled wells tapping the underlying crystalline rock are generally greater than 100-feet deep and yield between 20 and 35-gallons of water per minute.

Groundwater elevations across the Site and surrounding properties have varied between 2 to 4-feet beneath surface grade, dependent upon seasonal fluctuations. Hydraulic gradient through the area has been determined to flow generally to the south.

¹Reference: *Soil Survey, Johnston County, North Carolina*. United States Department of Agriculture, Soil Conservation Service, In cooperation with North Carolina Agriculture Experiment Station and the New Hanover County Board of Commissioners.

²Reference: *Geologic Map of North Carolina*, Department of Natural Resources and Community Development, Division of Land Resources, 1985 edition.

Drilled and bored wells continue to be sources of domestic water supplies in rural areas of Johnston County. Johnston County while municipalities generally obtain water from surface sources. See **Section A, Figures 7, 8** and **9** for geologic cross section maps. Groundwater in the monitoring wells installed for completion of this CSA stabilized between 2 and 4 feet beneath surface grade. Local groundwater gradient was calculated by ECE through triangulation of the static water levels measured in the monitoring wells to be south as shown in **Section A, Figures 9** and **10**.

F SOIL SAMPLE RESULTS

F.1 Phase I UST Closure Activities (September 2009)

ECE mobilized to the Site on November 2, 2009 for the purpose of conducting field assessment activities necessary to determine a “worse case scenario” for the presence of petroleum contamination in the soils and groundwater on the Site. In conducting this assessment, ECE installed one hand augured soil boring designated as MW-1 using a 3.25-inch diameter stainless steel hand auger. The boring was advanced close to the southeast corner of the 12,000 gallon gasoline UST in native soils which is the area down-gradient of OW-1 and OW-3 that showed the highest levels of petroleum contamination in the previously completed Site Check. As stated previously, MW-1 was installed to a total depth of 10-feet below land surface at the location indicated in **Section A, Figure 2**.

One soil sample was collected from MW-1 at a depth of 2-feet below land surface and submitted to Environmental Conservation Laboratories, Inc. of Cary NC (NCDENR-DWQ certification # 591) for laboratory analysis by EPA Methods 8260 the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbon (VPH) analyses.

The analytical results for EPA Methods 8260 revealed the presence of two parameters (benzene and MTBE) at detectable levels. However, none of these were detected at concentrations in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations as set forth in the “*Guidelines for Assessment and Corrective Action*” prepared by the North Carolina Underground Storage Tank Section (*The Guidelines*)

Finally, the analytical results for the MADEP VPH test did not detect the presence of C5-C8 aliphatics, C9-C12 aliphatics and C9-C10 aromatics. Therefore, none of these were detected at levels in excess of their Soil to Groundwater Maximum Soil Contaminant Concentration as set forth in *The Guidelines*. A summary of these soil analytical results is included in **Table 3** in **Section B**.

F.2 Comprehensive Site Assessment Soil Activities (October 2015)

ECE mobilized to the Site on October 22, 2015 for the purpose of conducting field assessment activities necessary to complete assessment of the petroleum contamination in the soils of the Site. In conducting this assessment, ECE advanced a series of six soil borings on October 22, 2015. Soils encountered while completing the soil borings consisted of dry to moist orange-brown clay to 5-feet below land surface. This time the soil samples were collected for laboratory analysis at a depth of 2 to 3-feet below land surface. The borings were located and installed in order to surround the suspected contaminant source area (UST systems). The exact locations of these six soil borings are shown in **Section A, Figure 2**.

These samples were submitted to Environmental Conservation Laboratories or Cary, NC (NCDENR-DWQ certification # 591) for laboratory analysis by EPA Methods 8260 and the MADEP-VPH analyses.

The analytical results for EPA Method 8260 revealed the presence of numerous parameters at detectable levels in the soil samples identified as S-1 through S-6. Further, the results for soil samples S-1, S-3, S-4 and S-6 also revealed one or more parameters at levels in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations (MSCCs) as set forth in *The Guidelines*.

The analytical results for the MADEP VPH tests detected the presence of C5-C8 aliphatics, C9-C18 aliphatics or C9-C22 aromatics in samples S-1, S-3 or S-6 at concentrations in excess of their Soil to Groundwater Maximum Soil Contaminant Concentrations (MSCCs) as set forth in *The Guidelines*.

Further samples S-1 and S-6 were also found to contain C9-C22 aromatics at levels in excess of their Residential MSCCs as set forth in *The Guidelines*. A summary of these soil analytical results is included in **Table 3** in **Section B** while the laboratory report can be found in **Section E**.

Discussion

These most recent analytical results provide an adequate representation of soil contaminant conditions downgradient of the UST systems. Because the nearest downgradient receptor is the pond located south and across NC 42 ECE believes the lateral extent of soil contamination above the Soil to Groundwater MSCCs has been adequately defined as shown on **Section A, Figure 2** and in **Section B, Table 3**. Assuming that the soil contaminant plume extends back to the source areas (UST systems) the area including petroleum contaminated soils measured approximately 100 feet in length by 80 feet in width to 3-feet in depth has been identified to contain targeted petroleum contaminants at concentrations that may need to be actively addressed while groundwater will also have to be remediated through either active remediation or natural attenuation.

G GROUNDWATER SAMPLING ACTIVITIES

G.1 Location and Installation of Monitoring Wells

ECE mobilized to the Site on November 2, 2009 for the purpose of conducting field assessment activities necessary to determine a worse case scenario for the maximum concentrations of the petroleum contamination in the soils and groundwater on the Site. In conducting this assessment, ECE completed one hand augured soil boring to a depth of 10 feet below surface grade. The boring (finished as monitoring well MW-1) was installed using 3.25-inch diameter hand auger to a depth of 10-feet below land surface. Soils encountered in the boring consisted of asphalt and gravel to 1 foot below land surface. From 1 to 5 feet soils consisted of moist orange clay. From 5 to 10 feet bls the material became a wet mottled orange-yellow clay. It was completed as MW-1 using 2-inch I.D. Schedule 40 PVC riser from land surface to a depth of 3-feet below land surface followed by 2-inch I.D. Schedule 40 well screen from 3 to 10-feet below land surface. The PVC well screen length was placed at such a depth that it would straddle the water table so the target contaminants (petroleum products) could be effectively monitored. MW-1 is located as shown in **Section A, Figure 2**.

The second set of monitoring wells was drilled during March 2015 and included the installation of monitoring wells MW-2 through MW-5 for completion of CSA activities. These wells were placed in strategic locations throughout the Site in order to identify the groundwater contamination plume and local groundwater gradient. Monitoring wells MW-2 through MW-5 were installed to total depth of 15 feet beneath surface grade with ten feet of 0.010 slotted PVC well screen placed from 5 to 15 feet below land surface and completed with solid PVC casing placed from 0 to 5 feet below land surface. Upon review of the laboratory results for groundwater samples collected from MW-2 through MW-5 it was determined that the plume may have traveled offsite in the east, west and southern directions so additional wells were required to be installed.

The third set of monitoring wells was drilled during May 2015 and included the installation of monitoring wells MW-6 and MW-7 for the CSA activities. These wells were placed in strategic locations on the southern and eastern property boundaries in order to complete definition of the groundwater contamination plume and local groundwater gradient. Monitoring wells MW-6 and MW-7 were installed to a total depth of 15 feet beneath surface grade with ten feet of 0.010 slotted PVC well screen placed from 5 to 15 feet below land surface and completed with solid PVC casing placed from 0 to 5 feet below land surface.

The final set of shallow monitoring wells was drilled during August 2015 and included the installation of monitoring wells MW-8, MW-9 and MW-10 for the CSA activities. MW-8 was placed on-Site in order to define the western most extent of groundwater contamination while MW-9 and MW-10 were placed across NC 42 and south of the Site in order to determine the downgradient extent of groundwater contamination and better

define local hydraulic gradient. Monitoring well MW-8 was installed to a depth of 15 feet below land surface while MW-9 and MW-10 were installed to a total depth of 13 feet beneath surface grade with ten feet of 0.010 slotted PVC well screen placed from 3 to 13 feet below land surface and completed with solid PVC casing placed from 0 to 3 feet below land surface. The borings completed for monitoring wells MW-2 through MW-10 were all advanced using 4" O.D. solid stem auger.

The vertical assessment of groundwater contamination included the installation of deep monitoring well DW-1. The boring completed for DW-1 was advanced using 6" O.D. hollow stem auger. DW-1 was completed as a "deep" Type II well with a 2" I.D. 10 foot long well screen placed from 39.5 to 29.5 feet below land surface and 2" I.D. solid riser pipe placed from 29.5 feet below land surface to land surface. Soils encountered while completing DW-1 included from 1 to 3 feet brown moist silty clay. From 3 to 10-feet bls the material became a orange-brown stained silty clay. From 11 to 15 feet below land surface wet yellow-orange silty sand was encountered. From 15 to 20 feet below land surface dry yellow-white silt was encountered. From 20 to 24 feet below land surface moist gray-saprolitic clayey silt was encountered. From 28 to 40 feet below land surface wet gray saprolitic silt was encountered. Rock was not encountered while installing DW-1.

All wells installed for completion of this CSA were properly developed using new disposal bailers prior to sampling. Development included lowering the bailers into the wells followed by rapidly removing the bailers in order to remove sediment from the wells prior to sampling. This procedure was repeated until the wells were producing samples with minimal turbidity. Well construction records for all of the monitoring wells installed for completion of this CSA are included in **Section C. Section A, Figure 2** displays all of the permanent monitoring well locations. Finally, **Section B, Table 5** is a summary of monitoring well construction data for all wells installed by ECE.

G.2 Groundwater Sampling Dates

Comprehensive Site Assessment Groundwater Investigation

March 2015 Groundwater Monitoring Event

The first groundwater sampling event occurred between March and October 2015 after the NCDENR instructed Mr. Fitzgerald to complete this CSA. ECE mobilized to the Site on March 12-13, 2015 in order to install four additional permanent monitoring wells designated as MW-2, MW-3, MW-4 and MW-5 all of which were located on-Site. ECE returned to the Site on March 18, 2015 in order to sample the five monitoring wells installed to date for inclusion of this CSA. This time the groundwater samples collected from the monitoring

wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH methods.

Data for the groundwater samples revealed the presence of targeted compounds in the samples collected from all five groundwater monitoring wells. Samples collected from these wells were also found to contain one or more targeted contaminants at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

The results for this groundwater sampling event showed that the extent of the groundwater contaminant plume was not adequately defined in the horizontal directions.

May 2015 Groundwater Monitoring Event

The next phase of groundwater sampling was conducted during May 17, 2015 for completion of the CSA included the installation of additional monitoring wells MW-6 and MW-7 at on-Site locations. A summary of the well construction details are included in **Section B Table 5** while the well construction logs are included in **Section C**. These wells were required after reviewing the results for the March 2015 monitoring event which revealed that the groundwater contaminant plume may have migrated offsite and under NC 42 to the south. Therefore, in order to complete the CSA groundwater samples were subsequently collected from monitoring wells MW-6 and MW-7 after their installation. The groundwater samples collected from the monitoring wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH method. Analytical results for the samples collected from MW-6 showed no contaminants targeted by any of these test methods while the samples collected from MW-7 showed numerous targeted contaminants at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202. The analytical results for this sampling event confirms that the groundwater contaminant plume has migrated offsite and under NC 42 to the south.

In summary, data for the groundwater samples obtained from wells MW-1, MW-3, MW-4, MW-5 and MW-7 showed the presence of targeted volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202. Analytical results for the samples collected from MW-2 and MW-6 were all below their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

August - October 2015 Groundwater Monitoring Event

This final phase of groundwater sampling was conducted during August through October 2015 for completion of the CSA and included the installation of shallow wells MW-8, MW-9 and MW-10 and also deep profile well DW-1. MW-8 was installed on-Site in order to define the western extent of groundwater contamination while MW-9 and MW-10 were installed off-Site and south of NC 42 to define the downgradient extent of groundwater contamination. Therefore, in order to complete the CSA groundwater samples were subsequently collected from monitoring wells MW-8, MW-9 and MW-10. The groundwater samples collected from these monitoring wells were submitted for analysis by EPA Methods 6200B (volatile organic compounds), 504.1 (EDB), 3030c (total lead) and the MADEP-VPH method. Analytical results for the groundwater samples obtained from wells MW-8 and MW-9 showed the presence of targeted volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

In summary, data for the groundwater samples obtained from wells MW-1, MW-3, MW-4, MW-5, MW-7, MW-8 and MW-9 showed the presence of volatile organic compounds in these samples at levels above their maximum allowable concentrations in groundwater as defined by 15A NCAC 2L .0202.

Isoconcentration maps for numerous contaminants have been prepared and can be found in **Section A, Figures 3 through 5**. **Section B, Table 4** is a summary of the combined analytical results for all of the sampling events. Laboratory reports for the March, May, September and October sampling events are presented in **Section E**.

Upon review of the data obtained by the CSA activities described above, it is evident that the horizontal extent of the groundwater contaminant plume has been defined to the 15A NCAC 2L Standards in all directions except to the east which is away from the surface water bodies.

G.3 Vertical extent of Groundwater Contamination (October 2015)

The vertical extent of groundwater contamination was addressed through installation of deep well DW-1 on October 22, 2015. DW-1 was installed on-Site and adjacent to MW-7 at the location indicated in **Figure 2** in order to define the vertical extent of groundwater contamination. DW-1 was installed at this location as MW-7 showed some of the highest groundwater contaminant levels and DW-1 is screened from 29.5 to 39.5 feet below land surface. Analytical results for a groundwater sample collected from DW-1 on October 29, 2015 indicated the presence of only 1,2,4 trimethylbenzene, chloroform and bromodichloromethane (at concentrations of 0.42, 2.4 and 1.1 ug/l, respectively). Of these only bromodichloromethane was detected at a concentration in excess of its 15A NCAC .0202 groundwater standard.

H FREE PRODUCT INVESTIGATION/RECOVERY

Free phase petroleum product has never been observed in any of the monitoring wells installed for completion of this CSA.

I. HYDROGEOLOGIC INVESTIGATION

I.1 Horizontal Groundwater Hydraulic Gradient

Data obtained from the gauging of wells on, and related to, the Site were recorded in a data file created by Surfer 16®, a surface modeling program. Data for each event were interpolated utilizing the Kriging gridding method. After data for selected events were interpolated to determine groundwater gradient, an AutoCad® digital extract (DXF) file was exported for use in the groundwater hydraulic gradient maps presented in **Figures 9 and 10**. Overall, groundwater hydraulic gradient has been determined to flow to the southwest through the source area on the Site.

Utilizing past and current hydraulic gradient data obtained from the Site, ECE has calculated the horizontal gradient to be 0.012 ft/ft (October 29, 2015) and 0.013 ft/ft (December 8, 2015). Based on data collected during this measuring event, it can be concluded that the groundwater gradient trends mainly to the south and the pond located across NC 42.

I.2 Vertical Groundwater Hydraulic Gradient

The vertical gradient of groundwater flow was also assessed by measuring the groundwater elevations in well nest MW-7/DW-1 on October 29, 2015 and December 8, 2015. Using these measurements, ECE calculated the vertical hydraulic gradient to be 0.012 ft/ft downward.

I.3 Aquifer Testing

Rising and falling head tests (slug tests) were conducted on monitoring wells MW-2, MW-5 and DW-1 on December 8, 2015. The purpose of the testing was to assess the values of horizontal hydraulic conductivity (K) of the water table aquifer at various locations.

The tests were performed using a 1-inch diameter, 5.5-foot long PVC slug to create an instantaneous change in the water level (head) at each selected well. A Solinst Levellogger Model 3001 pressure transducer was used to measure water level fluctuations during each test. The pressure transducer was attached to a laptop computer in order to download the data in real time. The depth to water from the top of the PVC well casing was measured prior to insertion of the pressure transducer and slug. Water levels were also measured by hand at various times during each test, and at the completion of each test, to verify the electronic data.

Rising and falling head tests were conducted during the field investigation. Falling head tests consisted of rapidly lowering the PVC slug into the well and simultaneously initiating a logarithmic recording interval on the data logger at two second intervals. Rising head tests were conducted by removing the slug and initiating a new logarithmic recording step on the data logger at two second intervals.

The slug test data were analyzed using the Bouwer and Rice method, which accounts for the effects of partial well penetration and changing aquifer thickness (water table conditions). The surficial aquifer thickness was estimated from boring logs to be approximately fifteen feet thick. A packing porosity of 25 percent for the well filter pack was assumed. The results of the slug test data analyses using the Bouwer and Rice method is summarized on the table below:

WELL	BOUWER AND RICE METHOD CONDUCTIVITY (feet/day)	TYPE OF TEST
MW-2	0.179	Falling Head
MW-2	0.194	Rising Head
MW-5	0.179	Falling Head
MW-5	0.154	Rising Head
DW-1	0.399	Falling Head
DW-1	0.376	Rising Head

The hydraulic conductivity values for the water table aquifer obtained as a result of this investigation averaged on the order of 10^{-1} feet per day (ft/day). The geometric average of the hydraulic conductivity estimate for MW-2 and MW-5 using the Bouwer and Rice method is 0.176 ft/day. These values are consistent with a silty water table aquifer. Time vs. head curves for the slug tests summarized above are included in **Section D**.

J DISCUSSION

J.1 Nature and Extent of Contamination

The nature of the contamination at the Site is the presence of petroleum hydrocarbons in the form of gasoline and related chemical additives which are attributed to a release from gasoline UST systems. The UST system(s) located at the Site released an undetermined amount of gasoline and have contaminated the soils and groundwater of the Site. Chemical contaminants at levels in excess of the 15A NCAC 2L .0202 Water Quality Standards and 10 times the 15A NCAC 2B standards were detected in the groundwater within wells MW-1, MW-3, MW-4, MW-5, MW-7, MW-8 and MW-9. Further, the analytical result for a surface water sample collected from the pond located south of the site and NC 42 was found to contain toluene at a concentration of 0.42 ug/l. It is not clear whether the source of the toluene is the result of groundwater discharge or surface runoff from adjacent NC 42.

J.2 Contaminant Migration and Potentially Affected Receptors

Contaminants related to the release are expected to continue to migrate with groundwater flow through the Site, to the south through the source area. Lateral spreading of the contaminants have also occurred. The lateral migration of the plume is directly related to the groundwater flow through the area, the soil matrix through which migration will occur, and to the presence of structures in contact with the groundwater and/or product at the Site. While no in-use water supply wells remain within a 1,000 foot radius of the release area two surface water bodies are in close proximity to the release area one of which is also downgradient of the contaminant plume. Several contaminant plume maps for individual contaminants of concern are depicted on **Figures 3 through 5** in **Section A**. Due to the established direction of contaminated groundwater migration it is likely that the release is discharging into the pond located south of Site and NC 42. This statement is based on the analytical results for the groundwater samples collected from MW-7 and MW-9 (located adjacent to the pond) which identified dissolved phase groundwater contaminants at concentrations in excess of 10 times the maximum allowable concentrations in surface water as set forth in 15A NCAC 2B. **Section A, Figure 1** display the ponds relative to the Site while **Section B, Table 5** includes a summary of the known water supply well data.

J.3 Lowering Risk Classification

Currently the Site is classified as “intermediate risk” due to the presence of two ponds located within a 500 foot radius of the source area. Further, based on the findings of this CSA the pond located across south of the Site

and across NC 42 is likely being impacted by an ongoing discharge of groundwater into the pond. There is no cost effective way to lower the current risk classification from “intermediate” to “low”.

J.4 Applicable Cleanup Levels

As the Site will remain classified as “intermediate”, the applicable cleanup level for the petroleum-contaminated soils will be no less than the Residential MSCCs as set forth in *The Guidelines*. Further, the groundwater contaminant plume would have to be remediated to less than 10 times the maximum allowable concentrations in surface water as set forth in 15A NCAC 2B.

K CONCLUSIONS AND RECOMMENDATIONS

ECE has completed this Comprehensive Site Assessment in order to comply with N.C.G.S. 143-215.84, NCAC 15A, 2L .0106(c), 15A NCAC 2N .0706 and the NCDENR's "*Guidelines for Assessment and Corrective Action for UST Releases*" prepared by the North Carolina Underground Storage Tank Section effective July 15, 2008, Change 2 Effective October 1, 2012.

Petroleum constituents in the Site's soils and groundwater have migrated from the source area. This is likely due to the solubility or the primary petroleum contaminant (gasoline) and the sandy subsurface soil layer encountered at approximately 12 feet below land surface during the assessment that has fairly high permeability characteristics. Because groundwater contamination has been measured in samples collected from monitoring well MW-9 located off-Site and adjacent to a pond the presence of petroleum contaminants in the water are likely being discharged with groundwater into the pond located across NC 42 and south of the Site.

Remedial Alternatives

ECE believes that consideration should first always be given to eliminating nearby receptors in order to lower Site risk. Unfortunately, there is no way to remove the receptor (i.e. downgradient pond) located across NC 42 and south of the Site. However, due to the size of the pond (approximately 8 acres) it is likely that if the petroleum contaminants are being discharged into the pond with groundwater then they are being sufficiently diluted to a level that there is not a significant impact to the pond. Because the downgradient pond is likely being impacted ECE does believe that a Corrective Action Plan (CAP) should be developed primarily to insure that the contaminant discharge is being sufficiently diluted upon entering the pond. Along this line ECE believes that an evaluation of the processes of natural attenuation and biodegradation for addressing the groundwater contaminants should be completed to further support this theory. If it is determined that this is not a viable option then one or more active groundwater cleanup options will need to be considered.

Recommendations

The subject release will likely remain classified as "intermediate risk" due to the continued presence of two ponds located within 500 feet of the source area. Therefore, ECE believes that groundwater contaminant modeling is warranted in order to better quantify the risk of contaminant discharge into the pond because there is no way to eliminate these nearby surface water bodies.

Finally, ECE recommends that Tommy Fitzgerald submit a copy of this CSA to the NCDENR-DWM, UST Section to the attention of Mr. Jeremy Poplawski.

L REFERENCES

Geologic Map of North Carolina, Department of Natural Resources and Community Development, Division of Land Resources, 1985.

Geology and Ground-Water Resources of the Raleigh Area North Carolina, Groundwater Bulletin Number 15. Prepared by the North Carolina Department of Water Resources, November 1968.

“Guidelines for Assessment and Corrective Action for UST Releases” prepared by the North Carolina Underground Storage Tank Section effective July 15, 2008, Change 2 Effective October 1, 2012

North Carolina Administrative Code, Title 15, Subchapter 2L, Section .0100, 0115 and .0200.

Soil Survey of Johnston County, North Carolina. United States Department of Agriculture, Soil Conservation Service, in cooperation with the North Carolina Department of Natural Resources and Community Development, North Carolina Agricultural Research Service, North Carolina Agricultural Extension Service, and the Wake County Board of Commissioners, November 1970.

Johnston County GIS Office

L LIMITATIONS

This report has been prepared for the exclusive use of Tommy Fitzgerald and the Grocery Bag and/or their designees, successors or assigns. It has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. ECE's conclusions and recommendations are based on information supplied by others, together with ECE's own site observations. Although ECE cannot be responsible for the accuracy of data supplied by others, ECE has no reason to suspect that any of the information is inaccurate. The observations described herein are based upon conditions readily visible on the site at the time of ECE's visit(s).

ECE cannot assume responsibility for the person(s) in charge of the site, nor otherwise undertake responsibility for reporting to any local, state or federal public agencies any conditions at the site that may present a potential danger to public health, safety or the environment. It is the responsibility of Tommy Fitzgerald and the Grocery Bag to notify the appropriate local, state or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety or the environment.

E:\ECE\projects\GroceryBag\GroceryBagCSA.doc

Section A

Figures

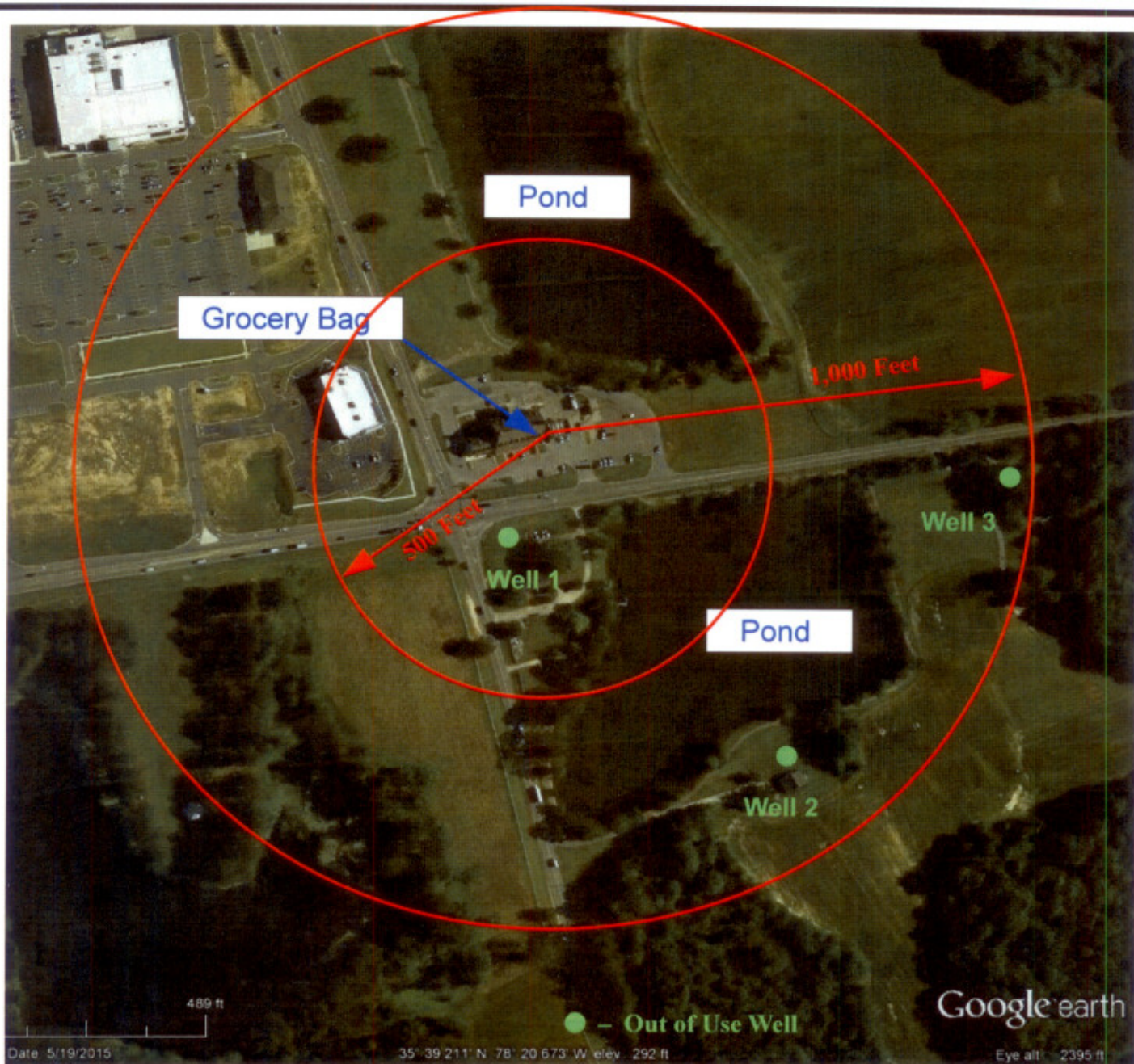


Figure 1
 Site Location Map
 Grocery Bag
 4879-A Highway 42 East
 Clayton, NC



***East Coast
 Environmental, P.A.***

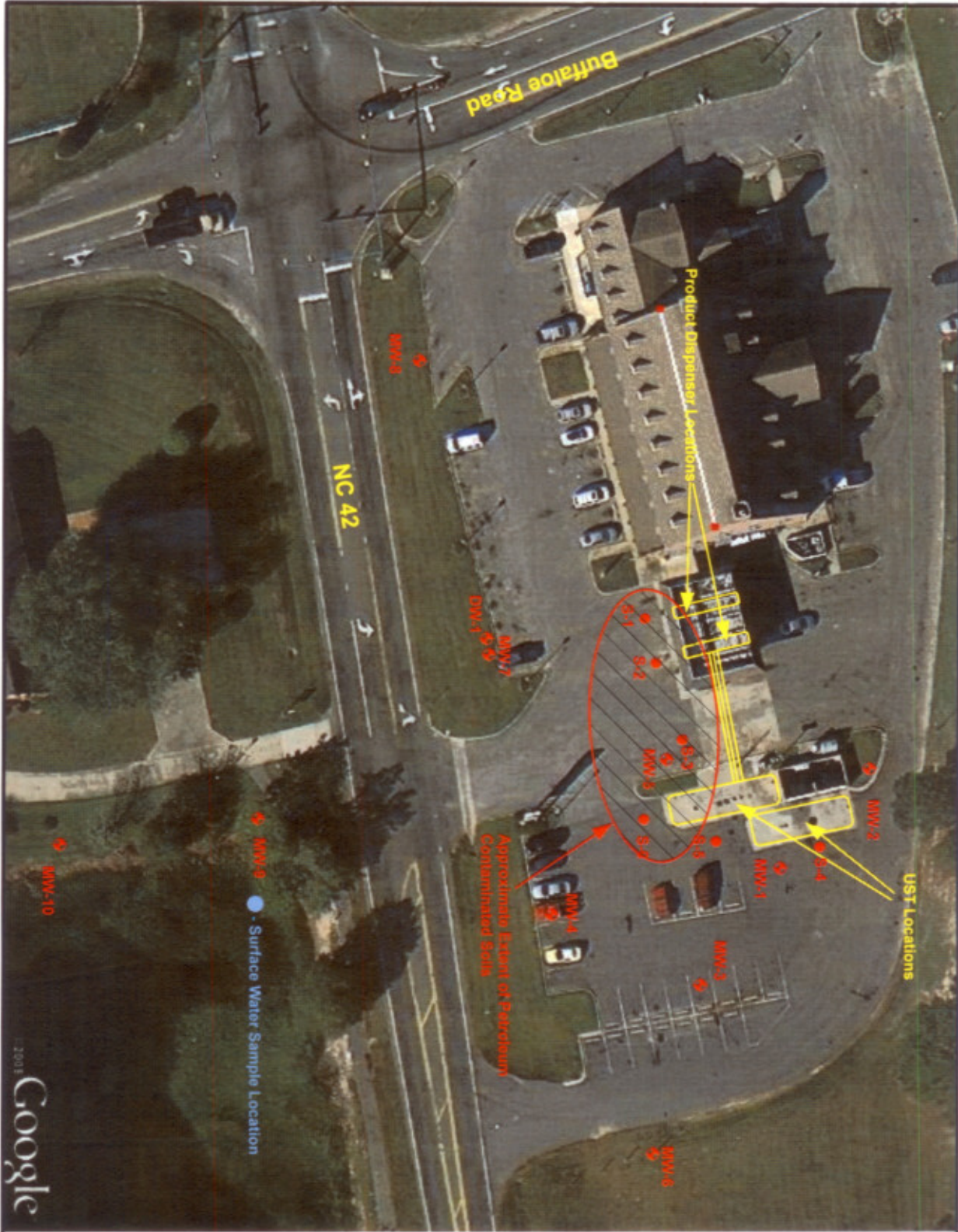
3815 Junction Boulevard
 Raleigh, North Carolina 27603
 (919) 772-0268 Fax: (919) 772-0468

Scale:
 NTS

Prep. By:
 TRW

Rev. By:
 TRW

Date:
 12/28/2015



2003 Google

100'



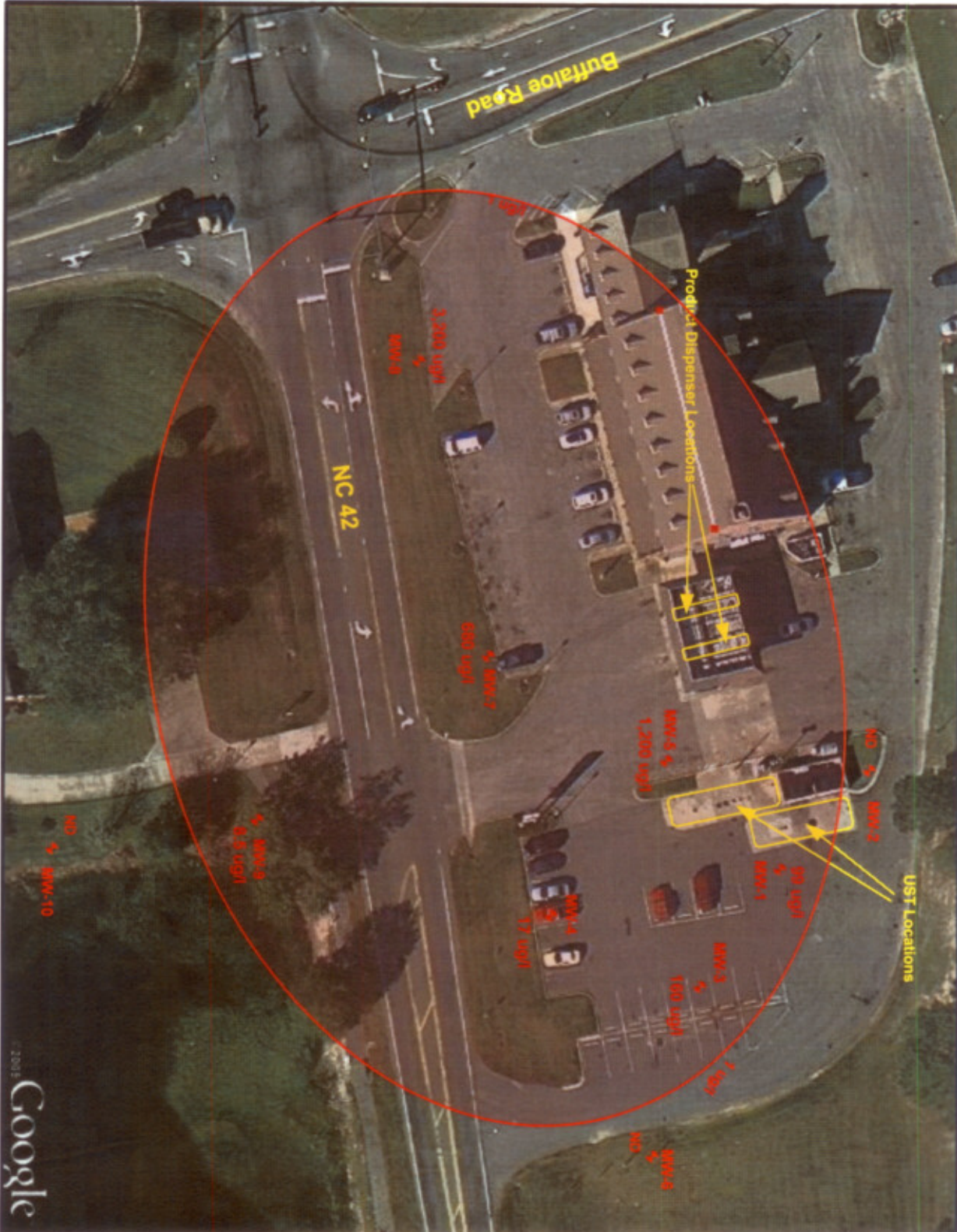
Figure 2

Figure 2
 Site Map With UST, System Soil Boring
 And Monitoring Well Locations
 Grocery Bag
 4879-A NC 42 Clayton, North Carolina

**East Coast
 Environmental, P.A.**

3815 Junction Boulevard
 Raleigh, North Carolina 27603
 (919) 772-0268 Fax: (919) 772-0468

Scale: 1"=40'	Prep. By: TRW	Rev. By: TRW	Date: 8/8/2014
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© 2003 Google

100'



Figure 3
Benzene Groundwater Contaminant Map
Grocery Bag
4879-A NC 42 Clayton, North Carolina

**East Coast
Environmental, P.A.**

3815 Junction Boulevard
Raleigh, North Carolina 27603
(919) 772-0266 Fax: (919) 772-0466

Scale: 1"=40'	Prep. By: TRW	Rev. By: TRW	Date: 8/8/2014
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Figure 3

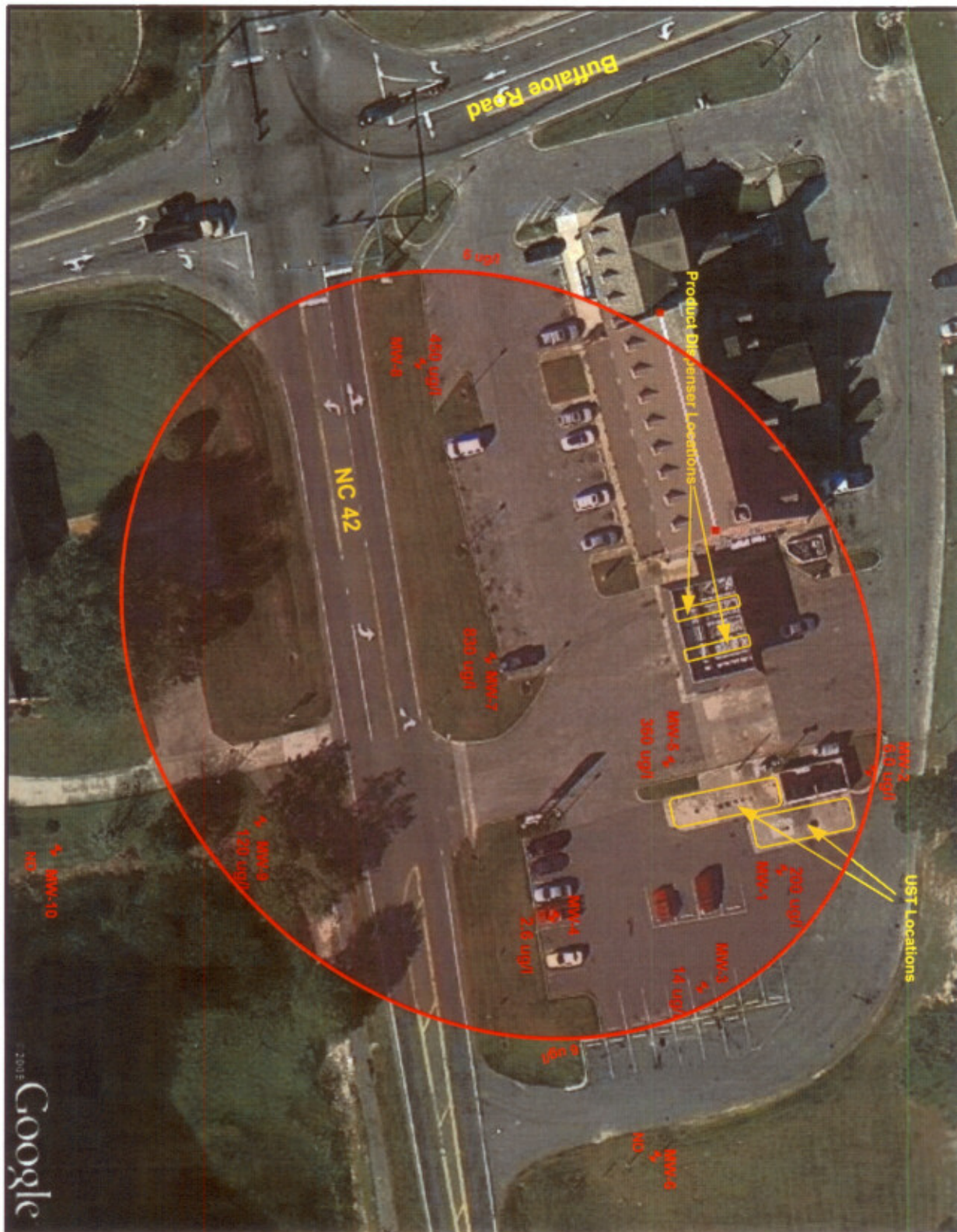


Figure 4
 Naphthalene Groundwater Contaminant Map
 Grocery Bag
 4879-A NC 42 Clayton, North Carolina

**East Coast
 Environmental, P.A.**

3815 Junction Boulevard
 Raleigh, North Carolina 27603
 (919) 772-0268 Fax: (919) 772-0468

Scale:
 1"=40'

Prep. By:
 TRW

Rev. By:
 TRW

Date:
 8/8/2014



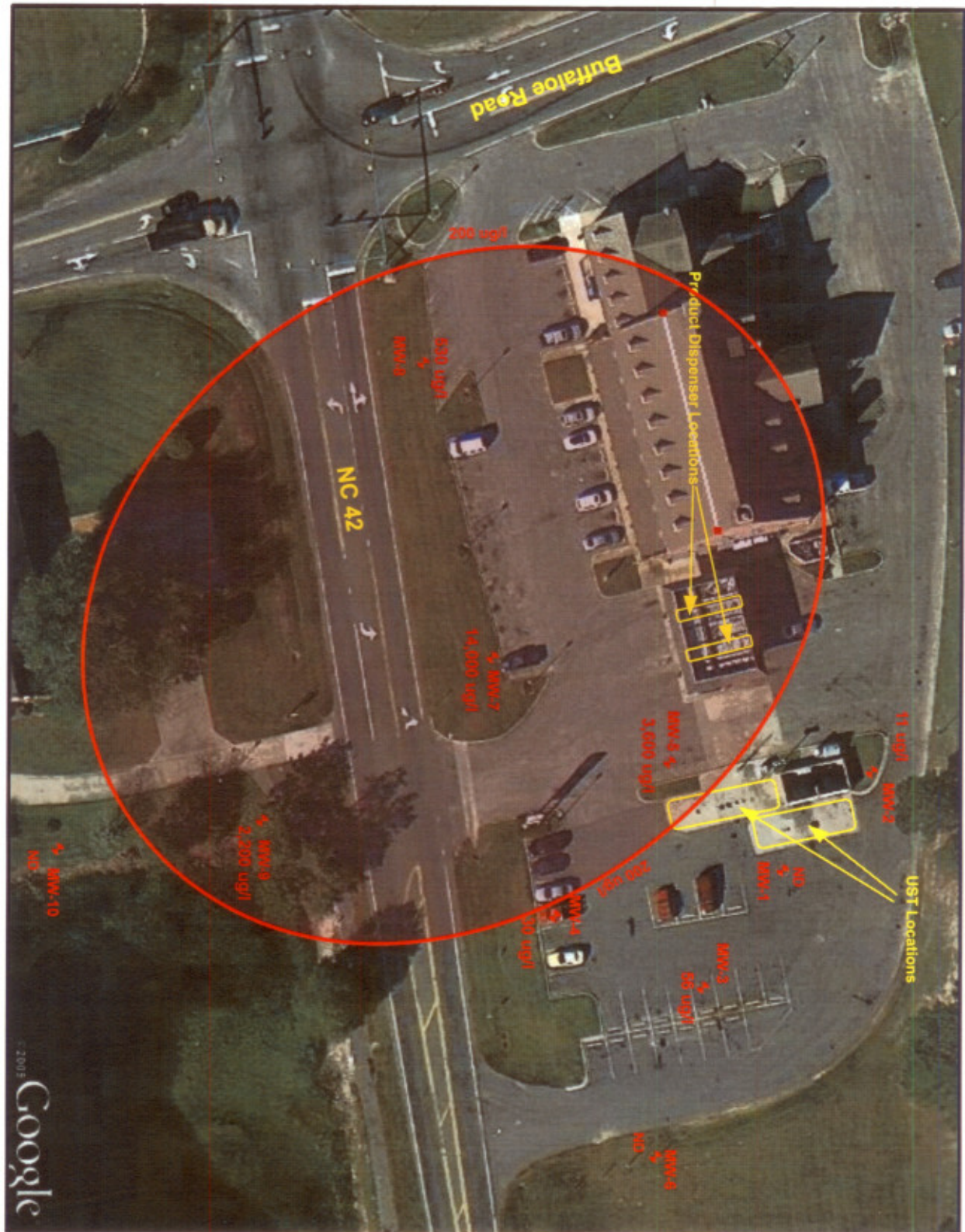


Figure 5



Figure 5
C9-C10 Aromatics Contaminant Map
Grocery Bag
4879-A NC 42 Clayton, North Carolina

Scale:
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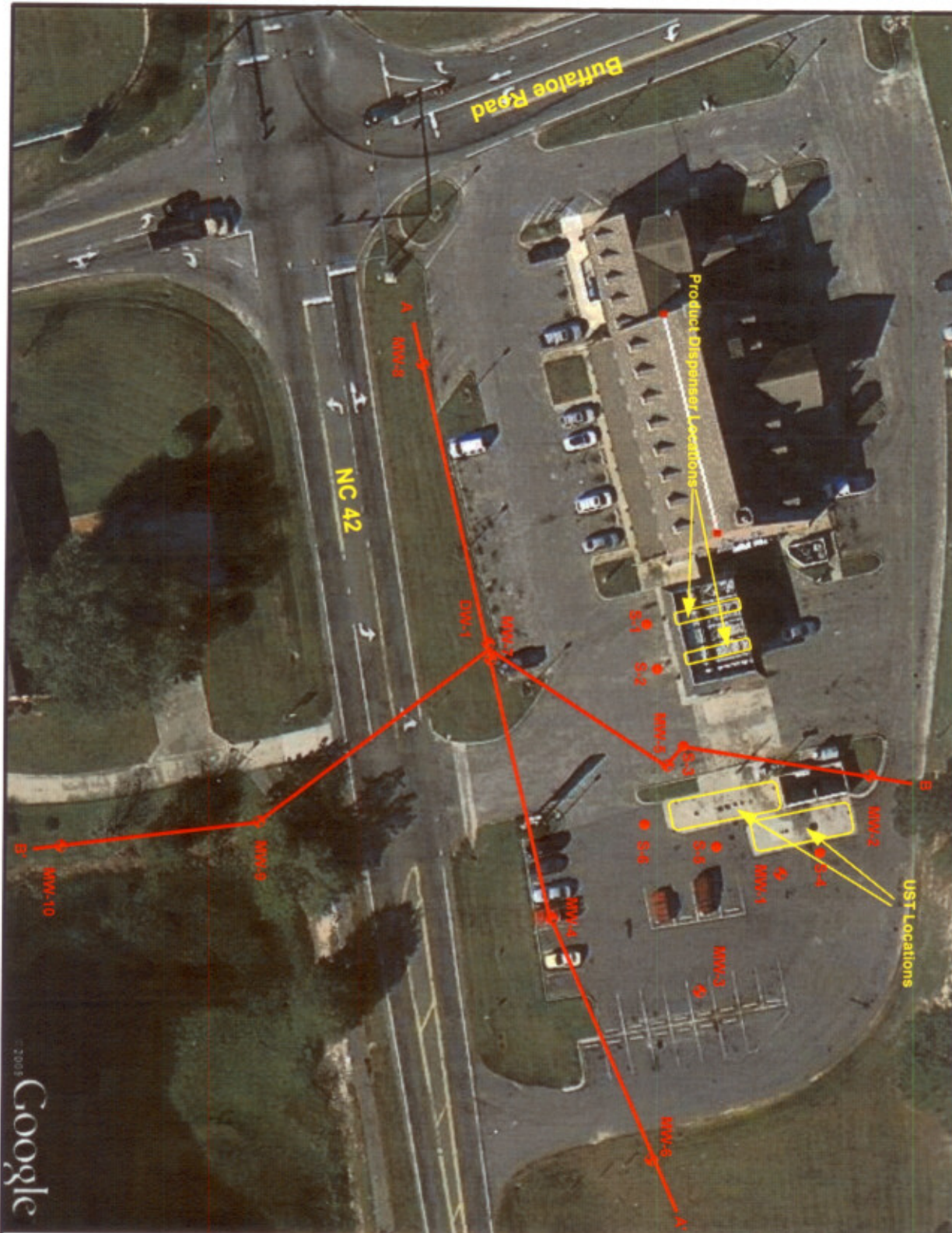
Prep. By:
TRW

Rev. By:
TRW

Date:
8/8/2014

**East Coast
Environmental, P.A.**

3815 Junction Boulevard
Raleigh, North Carolina 27603
(919) 772-0288 Fax: (919) 772-0468



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100'

Figure 6



Figure 6
 Site Map With Contaminant Source
 And Monitoring Well Locations
 Grocery Bag
 NC 42 Clayton, North Carolina

Scale: 1"=40'	Prep. By: TRW	Rev. By: TRW
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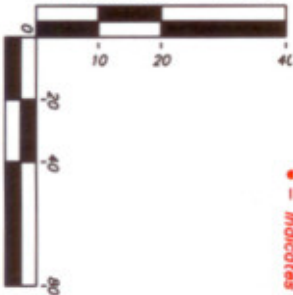
**East Coast
 Environmental, P.A.**

3815 Junction Boulevard
 Raleigh, North Carolina 27603
 (919) 772-0266 Fax: (919) 772-0488

Date: 8/8/2014

VERTICAL SCALE

1' - 20'



● - Indicates Soil Sample

VERTICAL SCALE

1" = 20'



HORIZONTAL SCALE

1" = 40'



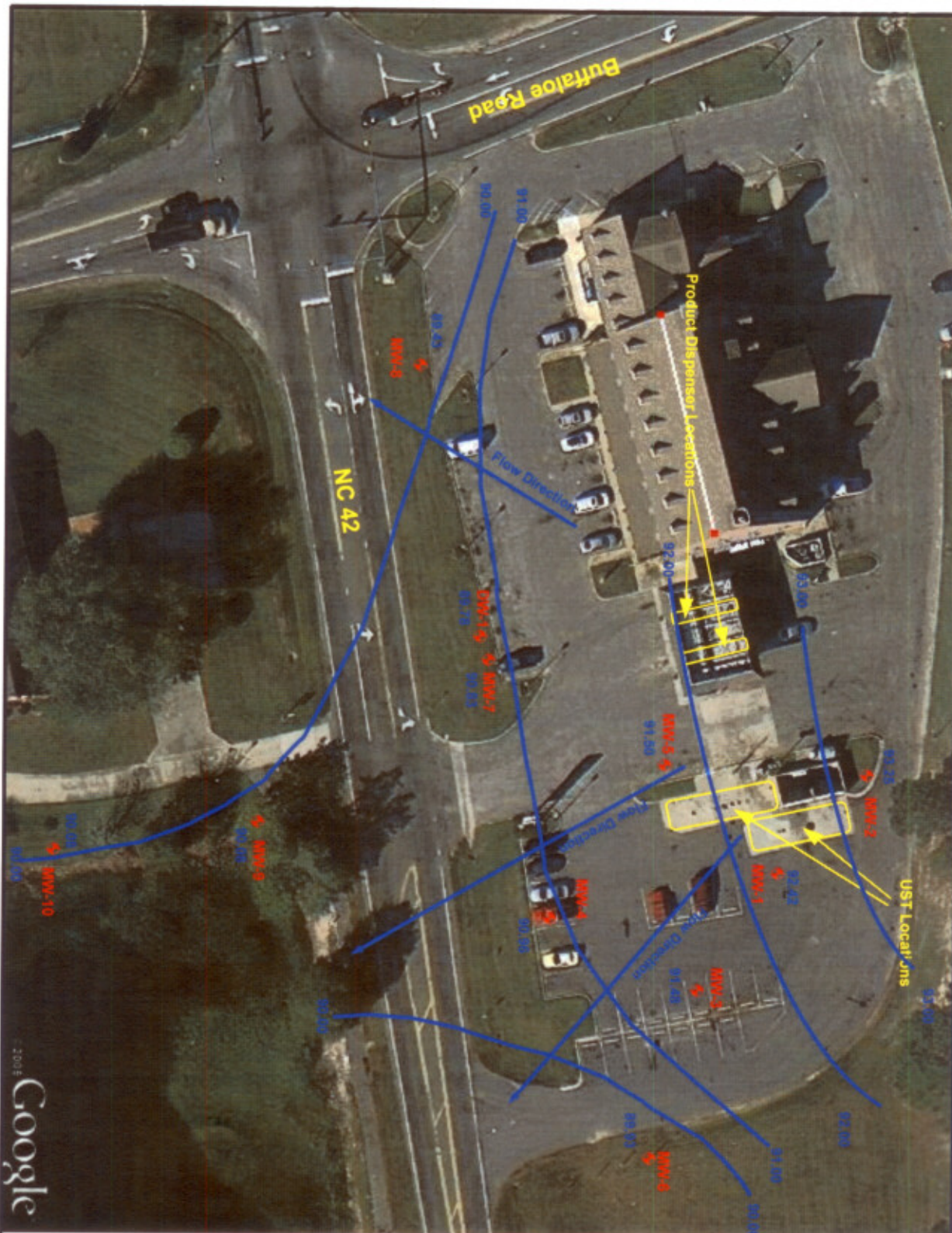


Figure 9



<p>Figure 9 Groundwater Hydraulic Gradient Map 10-29-15 Grocery Bag NC 42 Clayton, North Carolina</p>		<p>East Coast Environmental, P.A. 3815 Junction Boulevard Raleigh, North Carolina 27603 (919) 772-0266 Fax: (919) 772-0468</p>	
Scale:	1"=40'	Prep. By:	TRW
		Rev. By:	TRW
		Date:	8/8/2014

Section B

Tables

Table 1
UST Information
The Grocery Bag
4879 Highway 42 East, Clayton, Johnston County

UST ID #	Last Contents	Previous Contents	Capacity (gallons)	Construction Details	Tank Dimensions	Descriptions of Associated Piping	Date Tank Installed	Status of UST	Was release associated with UST
T-A1	Gasoline	Gasoline	8,000	Steel	8' x 21'4"	FRP	1/4/1993	In Use	No
T-A2	Gasoline	Gasoline	8,000	Steel	3.0' x 5.5'	FRP	1/4/1993	In Use	No
T-A3	Gasoline	Gasoline	12,000	Steel	10'6"x18'7"	FRP	5/3/1993	In Use	Yes

Table 1 (Continued)
Site History – UST Owner and Operator Information

Facility ID Number	Name of Owner	Dates of Ownership (mm/dd/yy to mm/dd/yy)
0-032284	The Grocery Bag CITGO T Clark Fitzgerald, Inc. 4879-A Highway 42 East Clayton, NC 27520	1/4/1993 to Present
	Name of Operator	Dates of Operation (mm/dd/yy to mm/dd/yy)
	The Grocery Bag CITGO T Clark Fitzgerald, Inc. 4879-A Highway 42 East Clayton, NC 27520	1/4/1993 to Present
Street Address		
4879-A Highway 42 East		
City	State	Zip
Clayton	NC	27520
		Telephone Number
		(919) 553-4088

Table 2
 Adjacent Property Ownership Information
 The Grocery Bag
 4879 Highway 42 East, Clayton, Johnston County

NCPIN #	Property Location (Occupant)	Property Owners Name/Address	Location
169900-43-7677	4879 Highway 42 East Clayton, NC (Site)	Percy Flowers Store LLC 4880 Highway 42 East Clayton, NC 27527	Site
169900-44-7540	102 Faire Lane Clayton, NC (Private Park Pond)	Rebecca D Flowers 4880 Highway 42 East Clayton, NC 27527	Property immediately north and east of the Site
169900-53-0118	(Pond)	Rebecca D Flowers 4880 Highway 42 East Clayton, NC 27527	Adjacent property across highway 42 southeast of the Site
169900-43-7146	4880 Highway 42 East Clayton, NC (River Dell Co. Office)	Rebecca D Flowers 4880 Highway 42 East Clayton, NC 27527	Adjacent property across highway 42 south of the Site
169900-42-2016	4855 Highway 42 East Clayton, NC (Vacant Wooded Lot)	Rebecca D Flowers 4880 Highway 42 East Clayton, NC 27527	Adjacent property across the intersection of highway 42 and Buffalo southwest of the Site
169900-34-8015	Under Construction (Shopping Center)	Rebecca D Flowers 4880 Highway 42 East Clayton, NC 27527	Property immediately across Buffalo road and west of the Site

Table 3
Summary of Analytical Data – Soil
 EPA Method 8260/8270/MADEP-VPH/EPH
 EPA Method 6200b
 Grocery Bag
 Clayton, Johnston County, North Carolina

Analytical Method >			8260	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260	8260
Sample ID	Contaminant of Concern >		Benzene	N-butyl benzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	4-Isopropyltoluene	Ethylbenzene	Isopropyl-benzene	Naphthalene	n-Propylbenzene	Sec butyl benzene	Toluene	MTBE	Total Xylenes
	Date Collected m/dd/yy	Sample Depth (ft)													
MW-1	11/2/09	2'	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND
S-1	10/22/15	3'	14.0	29.0	120.0	410.0	20.0	100.0	10.0	68.0	53.0	6.4	ND	ND	800.0
S-2	10/22/15	3'	0.049	ND	.0006J	0.0013	ND	0.003	ND	ND	ND	ND	0.0048	0.018	0.017
S-3	10/22/15	3'	0.340	ND	4.8	16.0	0.068	2.0	0.390	2.0	1.1	0.069	0.086	ND	31.0
S-4	10/22/15	3'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0037	0.350	ND
S-5	10/22/15	3'	.0009J	ND	ND	0.0017	ND	0.0025	ND	0.0018	ND	ND	0.0013	0.0014	0.004
S-6	10/22/15	3'	7.9	7.5	34.0	120.0	1.2	38.0	9.4	21.0	18.0	1.7	83.0	ND	270.0
Soil to Groundwater MSCC			.0056	4.3	8.5	8.3	0.12	4.9	1.7	0.16	1.7	3.3	4.3	0.091	4.6
Residential MSCC			18	626	782	782	100	1,560	1,564	313	626	626	1,200	350	3,129
Industrial/Commercial MSCC			164	16350	20440	20440	4,000	40000	40880	8176	16350	16350	32,000	3,100	81760

Results are in mg/kg

Bold results indicate exceedence of Soil to Groundwater MSCC

ND – Not Detected NT – Not Tested

Table 3
Summary of Analytical Data – Soil
MADEP-VPH
Grocery Bag
Clayton, Johnston County, North Carolina

Analytical Method >			8260	8260	8260		MADEP VPH	MADEP VPH	MADEP VPH
Sample ID	Contaminant of Concern >		Acetone	IPE	2-butanone		C5-C8 Aliphatics	C9-C12 Aliphatics o	C9-C10 Aromatics
	Date Collected m/dd/yy	Sample Depth (ft)							
MW-1	11/2/09	2'	ND	ND	ND		ND	ND	ND
S-1	10/22/15	3'	ND	ND	ND		125	374	599
S-2	10/22/15	3'	0.092	0.0003J	0.0093		ND	ND	ND
S-3	10/22/15	3'	2.1	ND	ND		23.5	43.2	56.6
S-4	10/22/15	3'	0.550J	ND	ND		ND	ND	ND
S-5	10/22/15	3'	0.100	0.0008J	ND		ND	ND	ND
S-6	10/22/15	3'	ND	ND	ND		554	753	580
Soil to Groundwater MSCC			24	0.37	NRS		68	540	31
Residential MSCC			14,000	256	NRS		939	1500	469
Industrial/Commercial MSCC			360,000	4088	NRS		24,258	40,000	12,264

Results are in mg/kg

Bold results indicate exceedence of Soil to Groundwater MSCC

ND – Not Detected NT – Not Tested

Table 4
Summary of Historical Analytical Data – Groundwater
EPA Method 6200b
Grocery Bag
Clayton, Johnston County, North Carolina

Analytical Method >			6200b	6200b	6200b	6200b	6200b	6200b	6200b	6200b	6200b	6200b	6200b	6200b	
Well ID	Contaminant of Concern >		Isopropyl ether	Benzene	Sec butyl benzene	Ethylbenzene	Isopropyl Benzene	MTBE	n-Butyl Benzene	n-Propyl Benzene	Naphthalene	Toluene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	Total Xylenes
	Date Collected m/dd/yy	Sample ID													
MW-1	3/18/15	MW-1	ND	99	ND	84	16	46	ND	35	200	5.8	2.5	22	41
MW-2	3/18/15	MW-2	ND	0.83	ND	1.4	0.70	5	ND	0.65	6.0	0.56	1.8	10	12
MW-3	3/18/15	MW-3	ND	160	ND	51	4.3	18	ND	2.6	14	2.9	9.8	52	420
MW-4	3/18/15	MW-4	ND	17	ND	ND	ND	7.6	ND	ND	2.6	ND	4.8	22	300
MW-5	3/18/15	MW-5	ND	1,200	ND	1,100	130	43	ND	290.0	360	1,500	540.0	2,400	6,700
MW-6	5/17/15	MW-6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7	5/17/15	MW-7	ND	680	ND	1,700	140	84	ND	440	830	1,400	1,300	4,500	12,000
MW-8	9/9/15	MW-8	34	3,200	12	540	49	930	ND	110	450	59	130	480	620
MW-8	10/29/15	MW-8	NA	3,100	NA	450	NA	640	NA	NA	NA	60	NA	NA	510
MW-9	9/9/15	MW-9	6.3	8.5	2.2	2.0	20	16	ND	33	120	3.1	3.6	ND	16
MW-9	10/29/15	MW-9	2.9	0.99	2.0	1.0	14	5.6	ND	22	110	2.7	1.3	ND	4.9
MW-10	9/9/15	MW-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DW-1	10/29/15	DW-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	ND
Pond	10/29/15	Pond	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	ND	ND	ND
2L Standard (ug/l)			70	1	70	600	70	20	70	70	6	600	400	400	500
GCL (ug/l)			25,000	5,000	8,500	84,500	25,000	20,000	6,900	30,000	6,000	260,000	25,000	28,500	85,500
2B Standard			-	1.19	-	97	250	19	-	-	12	11	130	-	670
10 x 2B Standard			-	11.9	-	970	2,500	190	-	-	120	110	1,300	-	6,700

Results are in ug/l

Bold results indicate exceedence of 2L Standards

Bold and shaded results indicate exceedence of GCL

ND – Non Detect

NRS – No Regulatory Standard

Table 4 (continued)
Summary of Historical Analytical Data – Groundwater
EPA Method 3030c, MADEP VPH
Grocery Bag
Clayton, Johnston County, North Carolina

Analytical Method >			6200b	6200b		3030c		MADEP VPH	MADEP VPH	MADEP VPH	
Well ID	Contaminant of Concern >		Chloroform	Bromodichloromethane		Total Lead		C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 aromatics	
	Date Collected m/dd/yy	Sample ID									
MW-1	3/18/15	MW-1	ND	ND		ND		270	1,260	ND	
MW-2	3/18/15	MW-2	ND	ND		30.0		30.3	46.4	11	
MW-3	3/18/15	MW-3	ND	ND		3.94		359	751	56	
MW-4	3/18/15	MW-4	ND	ND		ND		340	470	30	
MW-5	3/18/15	MW-5	ND	ND		19.7		5,400	19,400	3,600	
MW-6	5/17/15	MW-6	ND	ND		129		ND	ND	ND	
MW-7	5/17/15	MW-7	ND	ND		174		4,490	18,900	14,000	
MW-8	9/9/15	MW-8	ND	ND		10.7		176	201	530	
MW-9	9/9/15	MW-9	ND	ND		7.12		6,040	2,070	2,200	
MW-10	9/9/15	MW-10	ND	ND		ND		ND	ND	5.6	
DW-1	10/29/15	DW-1	2.4	1.1		20.7		ND	ND	ND	
Pond	10/29/15	Pond	ND	ND		NS		NS	NS	NS	
2L Standard (ug/l)			70	0.6		15		400	700	200	
GCL (ug/l)			70,000	NRS		15,000		NRS	NRS	NRS	
2B Standard			5.6	-		NRS		830	NRS	830	
10 x 2B Standard			56	-		NRS		8,300	NRS	8,300	

Results are in ug/l

Bold results indicate exceedence of 2L Standards

Bold and shaded results indicate exceedence of GCL

ND – Non Detect

NRS – No Regulatory Standard

Table 5
Well Construction Information
The Grocery Bag
4879 Highway 42 East, Clayton, Johnston County

Well ID	Date Installed	Well Casing Depth	Screened Interval	Bottom of Well	Relative Top of Casing Elevation	Depth to Water (9-10-15)	Relative Groundwater Elevation (9-10-15)	Depth to Water (10-29-15)	Relative Groundwater Elevation (10-29-15)
MW-1	11/2/09	0-3	3 -10	10	94.28	2.02	92.26	1.86	92.42
MW-2	3/12/15	0-5	5-15	15	95.08	1.75	93.33	1.83	93.25
MW-3	3/12/15	0-5	5-15	15	92.68	1.65	91.03	1.20	91.48
MW-4	3/13/15	0-5	5-15	15	93.42	2.26	91.16	2.46	90.96
MW-5	3/13/15	0-5	5-15	15	94.82	3.98	90.84	3.32	91.50
MW-6	5/14/15	0-5	5-15	15	93.16	3.85	89.31	3.23	89.93
MW-7	5/14/15	0-3	3-13	13	94.48	4.74	89.74	3.65	90.83
MW-8	8/26/15	0-5	5-15	15	94.13	6.62	87.51	4.70	89.43
MW-9	8/26/15	0-3	3-13	13	92.80	3.31	89.49	2.72	90.08
MW-10	8/26/15	0-3	3-13	13	92.46	2.92	89.54	2.38	90.08
DW-1	10/22/15	0-30	30-40	40	94.46	-	-	4.68	89.78

Supply Well Information

Well #	Well Owner/ Address	Well Use	Well Depth	Type of Well	Well Casing Depth	Well Screen Interval	Distance from Source Area
1	Rebecca D. Flowers 4880 Highway 42 East Clayton, NC 27520	Out of Use	Unknown	Drilled	Unknown	Unknown	355-feet south
2	Rebecca D. Flowers 4880 Highway 42 East Clayton, NC 27520	Potable	Unknown	Drilled	Unknown	Unknown	850-feet south
3	Rebecca D. Flowers 4880 Highway 42 East Clayton, NC 27520	Non Potable	Unknown	Drilled	Unknown	Unknown	925-feet southeast

Table 6
Summary of Historical Groundwater Level Measurements
Grocery Bag
Clayton, N.C.

Well ID	Well Elevation	Depth to Water	Groundwater Elevation	Product Thickness	Date
MW-1	94.28	1.10	93.18	N/A	12/8/2015
MW-2	95.08	1.02	94.06	N/A	12/8/2015
MW-3	92.68	0.20	92.48	N/A	12/8/2015
MW-4	93.42	1.40	92.02	N/A	12/8/2015
MW-5	94.82	2.00	92.82	N/A	12/8/2015
MW-6	93.16	0.20	92.96	N/A	12/8/2015
MW-7	94.48	2.43	92.05	N/A	12/8/2015
MW-8	94.13	3.12	91.01	N/A	12/8/2015
MW-9	92.80	2.00	90.80	N/A	12/8/2015
MW-10	92.46	1.93	90.53	N/A	12/8/2015
DW-1	94.46	2.85	91.61	N/A	12/8/2015

Well ID	Well Elevation	Depth to Water	Groundwater Elevation	Product Thickness	Date
MW-1	94.28	1.86	92.42	N/A	10/29/2015
MW-2	95.08	1.83	93.25	N/A	10/29/2015
MW-3	92.68	1.20	91.48	N/A	10/29/2015
MW-4	93.42	2.46	90.96	N/A	10/29/2015
MW-5	94.82	3.32	91.50	N/A	10/29/2015
MW-6	93.16	3.23	89.93	N/A	10/29/2015
MW-7	94.48	3.65	90.83	N/A	10/29/2015
MW-8	94.13	4.70	89.43	N/A	10/29/2015
MW-9	92.80	2.73	90.07	N/A	10/29/2015
MW-10	92.46	2.38	90.08	N/A	10/29/2015
DW-1	94.46	4.68	89.78	N/A	10/29/2015

Table 6

Summary of Historical Groundwater Level Measurements

Grocery Bag

Clayton, N.C.

Well ID	Well Elevation	Depth to Water	Groundwater Elevation	Product Thickness	Date
MW-1	94.28	2.02	92.26	N/A	9/10/2015
MW-2	95.08	1.75	93.33	N/A	9/10/2015
MW-3	92.68	1.65	91.03	N/A	9/10/2015
MW-4	93.42	2.26	91.16	N/A	9/10/2015
MW-5	94.82	3.98	90.84	N/A	9/10/2015
MW-6	93.16	3.85	89.31	N/A	9/10/2015
MW-7	94.48	4.74	89.74	N/A	9/10/2015
MW-8	94.13	6.62	87.51		9/10/2015
MW-9	92.80	3.31	89.49	N/A	9/10/2015
MW-10	92.46	2.92	89.54	N/A	9/10/2015
DW-1	94.46	Not Measured	Not Measured	N/A	9/10/2015

Section C

Well Construction Records



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

February 20, 2015

Tommy Fitzgerald
The Grocery Bag
4879-A Highway 42 East
Clayton, NC 27520

Subject: Monitoring Well Construction
Permit # WM0501066
The Grocery Bag
4879-A Highway 42 East
Clayton, NC -Johnson County

Dear Mr. Fitzgerald;

In accordance with the application received on February 11, 2015, we are forwarding herewith Monitoring Well Construction Permit No. WM0501066 dated February 20, 2015, issued for the construction of a monitor well system (installation of eight wells) at the subject property. **Please be aware that some counties have well construction programs, and you may be required to obtain a well construction permit before installation.**

This Permit will be effective from the date of its issuance and shall be subject to the conditions and limitations as specified therein. Please note the addition of stipulation #3 to the permit enclosed.

Sincerely,

Rick Bolich, L.G.
Assistant Regional Supervisor
Water Quality Regional Operations Section
Division of Water Resources, NCDENR

Enclosure

cc: RRO Files
Johnston County Health Department
Tom Will, East Coast Environmental, 3815 Junction Boulevard,
Raleigh, NC 27603

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 3/17/15 Well ID# MW-2

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
 (if well field, one lat/long is sufficient)

35.65436 N -78.34426 W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)
 For multiple wells list all depths if different (example: 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)
 If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

12. Well construction method: rotary
 e. auger, rotary, cable, direct push, etc.)

OR WATER SUPPLY WELLS ONLY:

a. Yield (gpm) Method of test:

b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	5 ft.	2 in.	Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5 ft.	15 ft.	2 in.	0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	3 ft.	3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
4 ft.	15 ft.	Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	5 ft.	Orange Clay
5 ft.	12 ft.	ORange mottled yellow orange clay
12 ft.	15 ft.	Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

3/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 3/17/15 Well ID# MW-3

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
 (if well field, one lat/long is sufficient)

35.65418

N

-78.34387

W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)

For multiple wells list all depths if different (example- 3 @ 200' and 2 @ 100')

10. Static water level below top of casing: 2 (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

12. Well construction method: rotary

e. auger, rotary, cable, direct push, etc.)

OR WATER SUPPLY WELLS ONLY:

a. Yield (gpm) Method of test:

b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	5 ft.	2 in.	Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5 ft.	15 ft.	2 in.	0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	3 ft.	3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
4 ft.	15 ft.	Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	5 ft.	Orange Clay
5 ft.	12 ft.	ORange mottled yellow orange clay
12 ft.	15 ft.	Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

3/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 3/18/15 **Well ID#** MW-4

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
 (if well field, one lat/long is sufficient)

35.65399 N **-78.34407** W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)
 For multiple wells list all depths if different (example: 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)
 If water level is above casing, use "+"

1. Borehole diameter: 4 (in.)

2. Well construction method: rotary

e. auger, rotary, cable, direct push, etc.)

OR WATER SUPPLY WELLS ONLY:

a. Yield (gpm) _____ **Method of test:** _____

b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft. 5	ft. 2	in. Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5	ft. 15	ft. 2	in. 0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft. 3	ft. 3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
4	ft. 15	ft. Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft. 5	ft. Orange Clay
5	ft. 12	ft. ORange mottled yellow orange clay
12	ft. 15	ft. Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:


 Signature of Certified Well Contractor

3/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 3/18/15 Well ID# MW-5

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
 (if well field, one lat/long is sufficient)

35.65428 N -78.34407 W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)

For multiple wells list all depths if different (example: 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

2. Well construction method: rotary

i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

3a. Yield (gpm) Method of test:

3b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft.	5	ft.	2 in. Sch 40 PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	ft.	in.	
ft.	ft.	ft.	in.	

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5	ft.	15	ft.	2 in.	0.010 Sch 40 PVC
ft.	ft.	ft.	in.		

18. GROUT

FROM		TO		MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft.	3	ft.	3000 PSI Con	Poured In
	ft.		ft.		
	ft.		ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM		TO		MATERIAL	EMPLACEMENT METHOD
4	ft.	15	ft.	Sand	Poured
	ft.		ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM		TO		DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft.	5	ft.	Orange Clay
5	ft.	12	ft.	Orange mottled yellow orange clay
12	ft.	15	ft.	Wet yellow clayey Sand
	ft.		ft.	
	ft.		ft.	
	ft.		ft.	
	ft.		ft.	

21. REMARKS

22. Certification:



Signature of Certified Well Contractor

3/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 5/17/15 **Well ID#** MW-6

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
 (if well field, one lat/long is sufficient)

35.65411

N

-78.34369

W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)

For multiple wells list all depths if different (example - 3@200' and 2@100')

0. Static water level below top of casing: 2 (ft.)

If water level is above casing, use "+"

1. Borehole diameter: 4 (in.)

2. Well construction method: rotary

e. auger, rotary, cable, direct push, etc.)

OR WATER SUPPLY WELLS ONLY:

a. Yield (gpm) _____ **Method of test:** _____

b. Disinfection type: _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft.	5	ft.	2 in. Sch 40 PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	ft.	ft.	ft.
ft.	ft.	ft.	ft.	ft.

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5	ft.	15	ft.	2 in.	0.010 Sch 40 PVC
ft.	ft.	ft.	ft.	ft.	ft.

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft.	3	ft. 3000 PSI Con Poured In
ft.	ft.	ft.	ft.
ft.	ft.	ft.	ft.

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
4	ft.	15	ft. Sand Poured
ft.	ft.	ft.	ft.

20. DRILLING LOG (attach additional sheets if necessary)

FROM		TO		DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft.	5	ft.	Orange Clay
5	ft.	12	ft.	Orange mottled yellow orange clay
12	ft.	15	ft.	Wet yellow clayey Sand
	ft.		ft.	
	ft.		ft.	
	ft.		ft.	
	ft.		ft.	

21. REMARKS

22. Certification:



Signature of Certified Well Contractor

5/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Information Processing Unit,
 1617 Mail Service Center, Raleigh, NC 27699-1617**

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

**Division of Water Resources, Underground Injection Control Program,
 1636 Mail Service Center, Raleigh, NC 27699-1636**

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:**Thomas Will**

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066**2. Well Construction Permit #:**

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):**Water Supply Well:**

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 5/17/15 **Well ID#** MW-7**5a. Well Location:****Grocery Bag****N/A**

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston**169900-43-7677**

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)**35.65393** **N** **-78.34443** **W****6. Is (are) the well(s):** ☐ Permanent or ☐ Temporary**7. Is this a repair to an existing well:** ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1
For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.**9. Total well depth below land surface:** 13 (ft.)
For multiple wells list all depths if different (example- 3@200' and 2@100')**10. Static water level below top of casing:** 2 (ft.)
If water level is above casing, use "+"**11. Borehole diameter:** 4 (in.)**12. Well construction method:** rotary
(i.e. auger, rotary, cable, direct push, etc.)**FOR WATER SUPPLY WELLS ONLY:****13a. Yield (gpm)** _____ **Method of test:** _____**13b. Disinfection type:** _____ **Amount:** _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft. 3	ft. 2	in. Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5	ft. 13	ft. 2	in. 0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft. 2	ft. 3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3	ft. 13	ft. Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft. 5	ft. Orange Clay
5	ft. 12	ft. Orange mottled yellow orange clay
12	ft. 13	ft. Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS**22. Certification:**

Signature of Certified Well Contractor

5/25/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS**24a. For All Wells:** Submit this form within 30 days of completion of well construction to the following:Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**24b. For Injection Wells ONLY:** In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**24c. For Water Supply & Injection Wells:**

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

WM0501066

2. Well Construction Permit #: WM0501066

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 9/2/15

Well ID# MW-8

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.65343 N -78.34414 W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 15 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

12. Well construction method: rotary

(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) _____ Method of test: _____

13b. Disinfection type: _____ Amount: _____

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft. 5	ft. 2	in. Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
5	ft. 15	ft. 2	in. 0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft. 3	ft. 3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
4	ft. 15	ft. Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft. 5	ft. Orange Clay
5	ft. 12	ft. Orange mottled yellow orange clay
12	ft. 15	ft. Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:


Signature of Certified Well Contractor

9/14/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

2. Well Construction Permit #: WM0501066

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 9/2/15 Well ID# MW-9

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.65363 N -78.34423 W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 13 (ft.)
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)
If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

12. Well construction method: rotary
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) Method of test:

13b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft.	3	ft.	2 in. Sch 40 PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
3	ft.	13	ft.	2 in.	0.010 Sch 40 PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT		
0	ft.	2	ft.	3000 PSI Con	Poured In
	ft.		ft.		
	ft.		ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD		
3	ft.	13	ft.	Sand	Poured
	ft.		ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft. 5	ft. Orange Clay
5	ft. 12	ft. Orange mottled yellow orange clay
12	ft. 13	ft. Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:



Signature of Certified Well Contractor

9/14/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

Thomas Will

Well Contractor Name

2700B

NC Well Contractor Certification Number

East Coast Environmental, P.A.

Company Name

2. Well Construction Permit #: WM0501066

List all applicable well permits (i.e. County, State, Variance, Injection, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 9/2/15 Well ID# MW-10

5a. Well Location:

Grocery Bag

N/A

Facility/Owner Name

Facility ID# (if applicable)

4879-A Highway 42 East

Physical Address, City, and Zip

Johnston

169900-43-7677

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.65343 N -78.34414 W

6. Is (are) the well(s): ☐ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1
For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 13 (ft.)
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 2 (ft.)
If water level is above casing, use "+"

11. Borehole diameter: 4 (in.)

12. Well construction method: rotary
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) Method of test:

13b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0	ft. 3	ft. 2	in. Sch 40	PVC

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
3	ft. 13	ft. 2	in. 0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0	ft. 2	ft. 3000 PSI Con	Poured In
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
3	ft. 13	ft. Sand	Poured
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0	ft. 5	ft. Orange Clay
5	ft. 12	ft. Orange mottled yellow orange clay
12	ft. 13	ft. Wet yellow clayey Sand
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

9/14/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells ONLY: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells:

Also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

James D. Barker

Well Contractor Name

3106-A

NC Well Contractor Certification Number

Quantex, Inc.

Company Name

2. Well Construction Permit #: NA

List all applicable well construction permits (i.e. County, State, Variance, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 10/22/15 DW-1

5. Well Location:

Grocery Bag

NA

Facility/Owner Name

Facility ID# (if applicable)

4885 NC Highway 42, Clayton NC 27527

Physical Address, City, and Zip

Johnston

NA

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

35.653919 N 78.344421 W

6. Is (are) the well(s): ☒ Permanent or ☐ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 39.5' (ft.)
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: NA (ft.)
If water level is above casing, use "+"

11. Borehole diameter: 8" (in.)

12. Well construction method: Auger
(i.e. auger, rotary, cable, direct push, etc.)

13. FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) Method of test:

13b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
4 ft.	6 ft.	Brown Silty CLAY
25 ft.	28 ft.	Brown Sandy fine SILT

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0 ft.	29.5 ft.	2" in.	Sch 40	PVC
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
29.5 ft.	39.5 ft.	2" in.	0.010	Sch 40	PVC
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0 ft.	26 ft.	Neat Cement	423 lbs. Poured
26 ft.	28 ft.	Bentonite	3/8" Pellets 35 lbs. Poured
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
28 ft.	39.5 ft.	#2 silica sand	pour
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0 ft.	6 ft.	Brown Silty CLAY
6 ft.	24 ft.	Brown SILT
24 ft.	39 ft.	Brown Sandy fine SILT
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

11/11/15

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

24. Submittal Instructions:

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

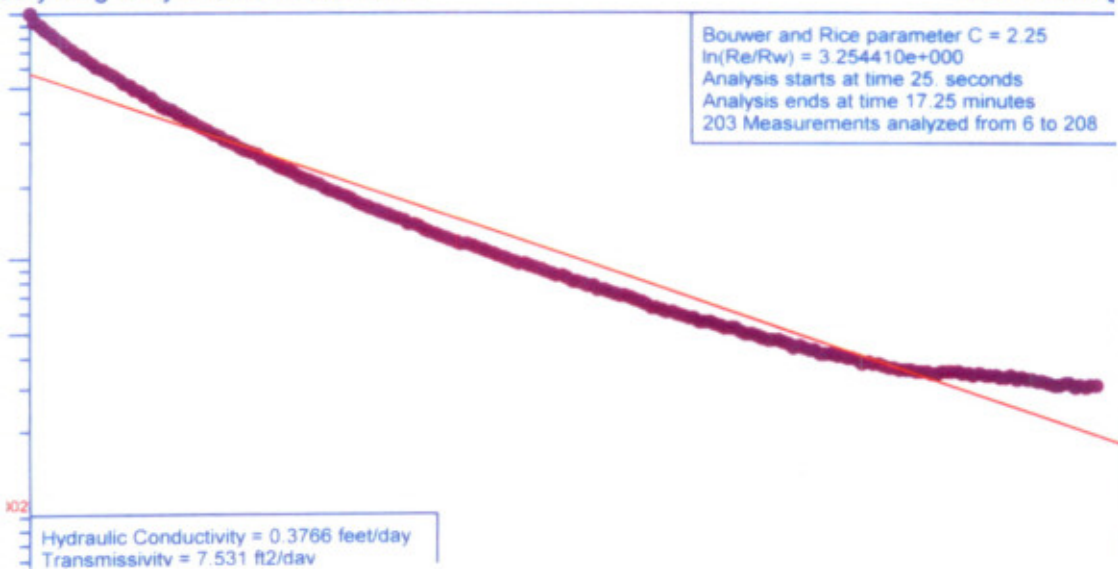
24b. For Injection Wells: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Geothermal Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

Section D

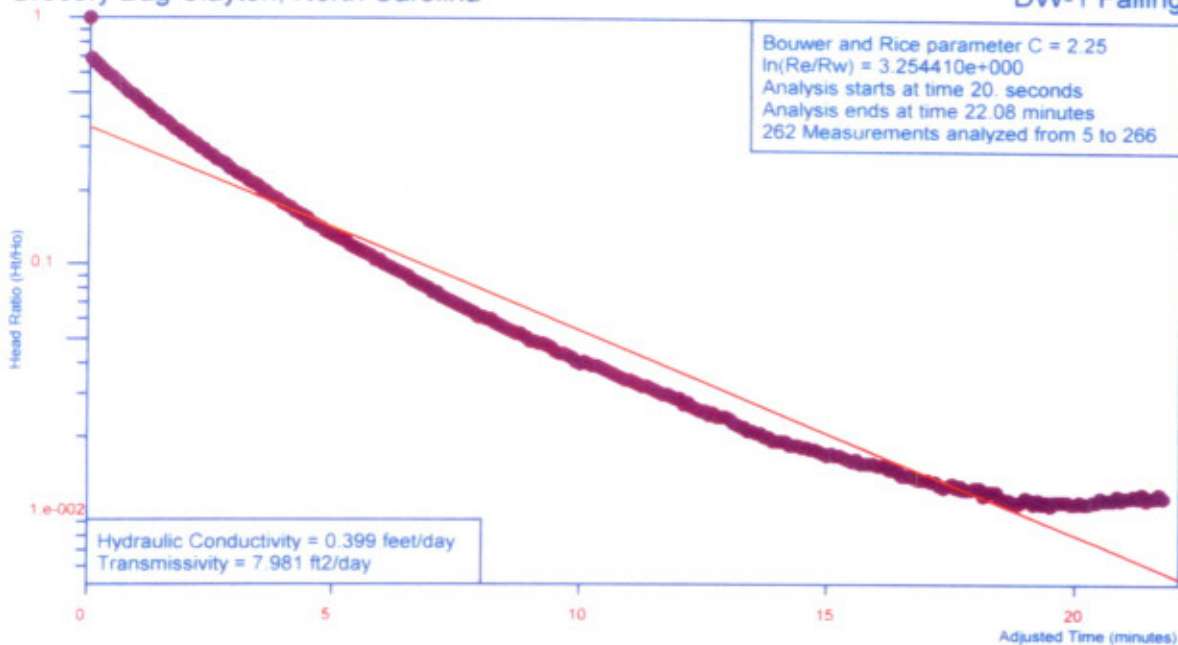
Aquifer Test Results



DW-1 Falling Head Test
 Grocery Bag Clayton, North Carolina

December 8, 2015

Bouwer and Rice Graph
 DW-1 Falling



Client: Grocery Bag
 Analysis by Starpoint Software

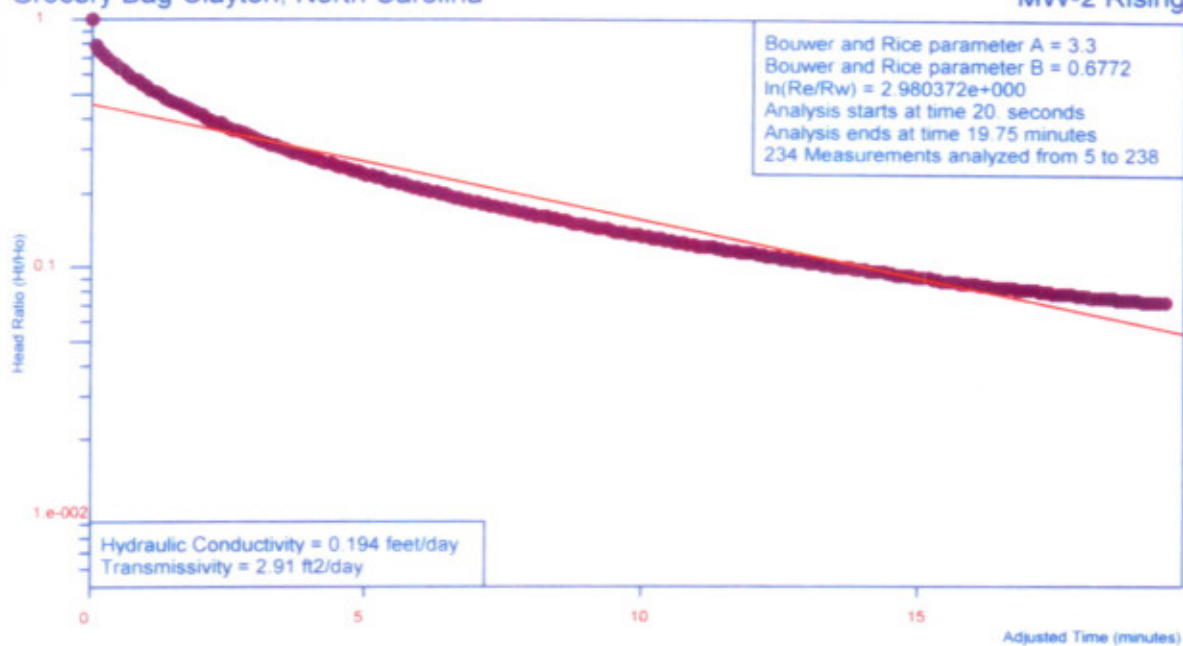
H_o is 2.565 feet at 20 seconds

MW-2 Falling Head Test

December 8, 2015 Bouwer and Rice Graph

Grocery Bag Clayton, North Carolina

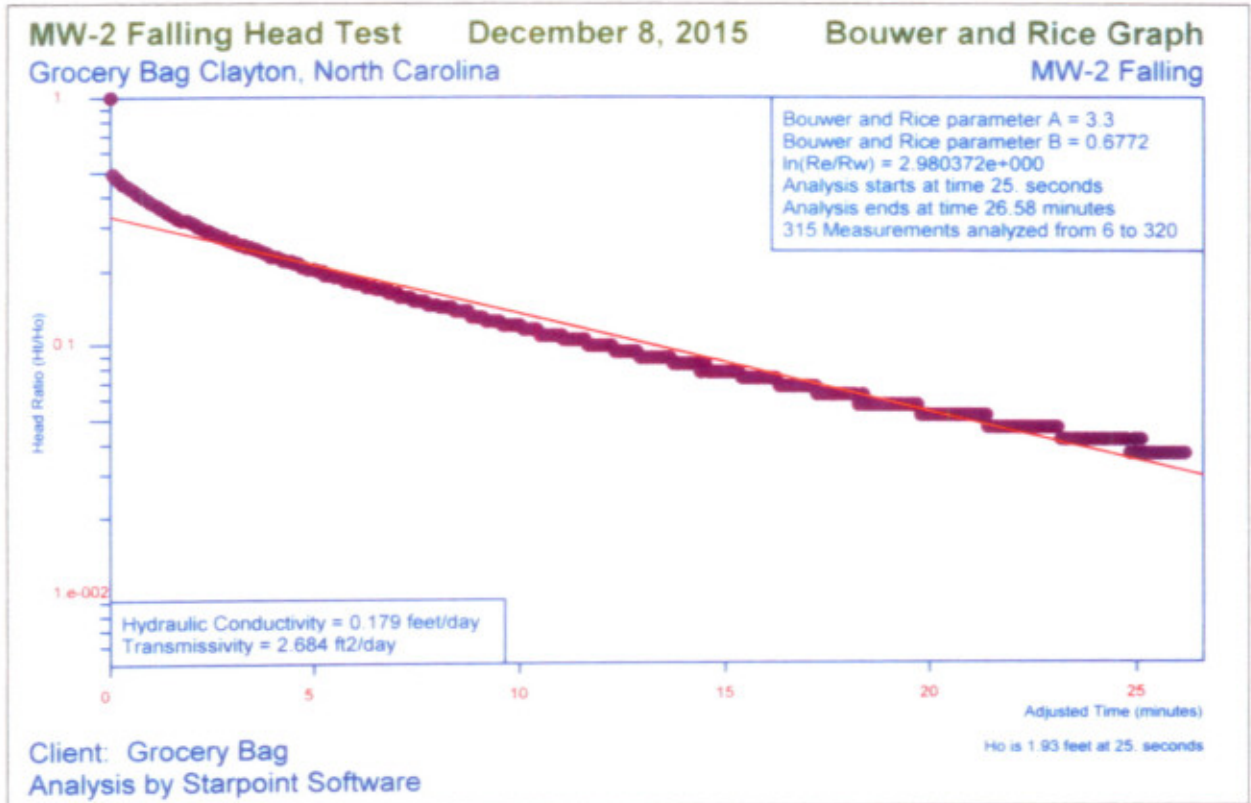
MW-2 Rising

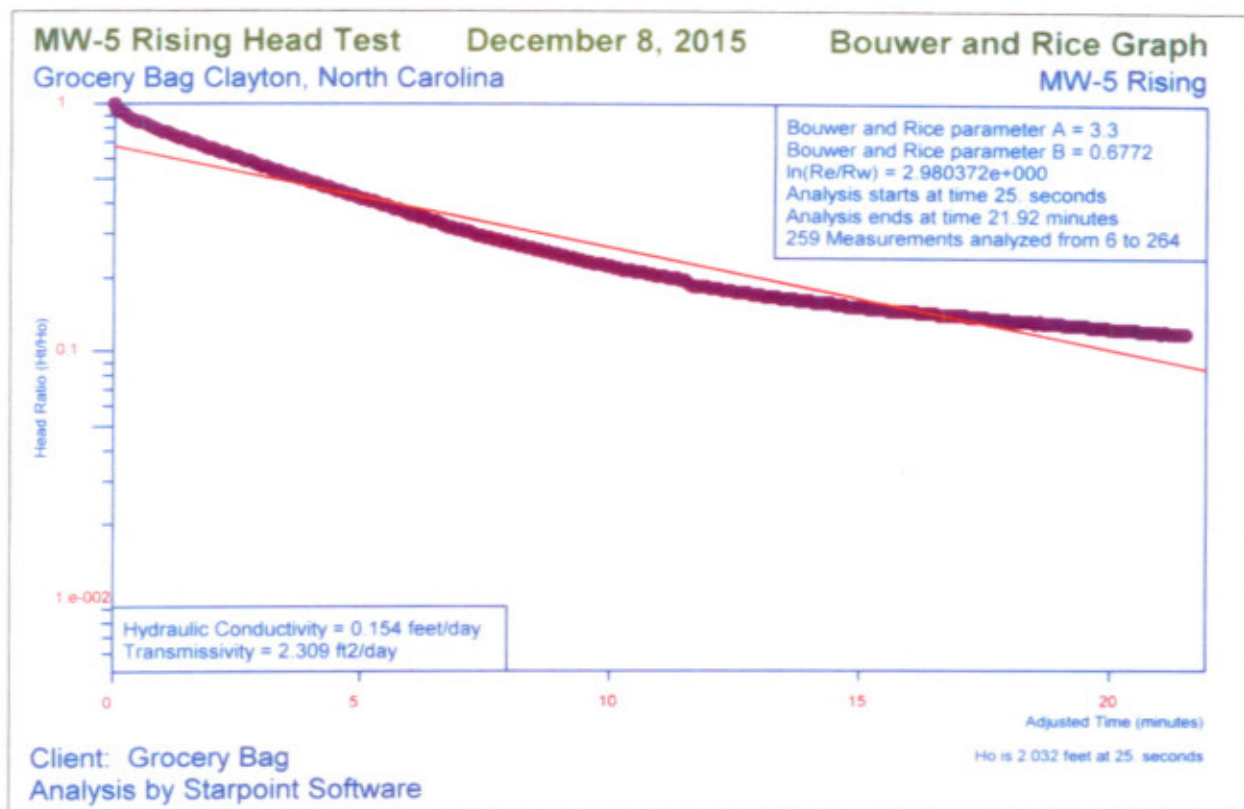


Client: Grocery Bag

Analysis by Starpoint Software

 H_o is 2.079 feet at 20. seconds





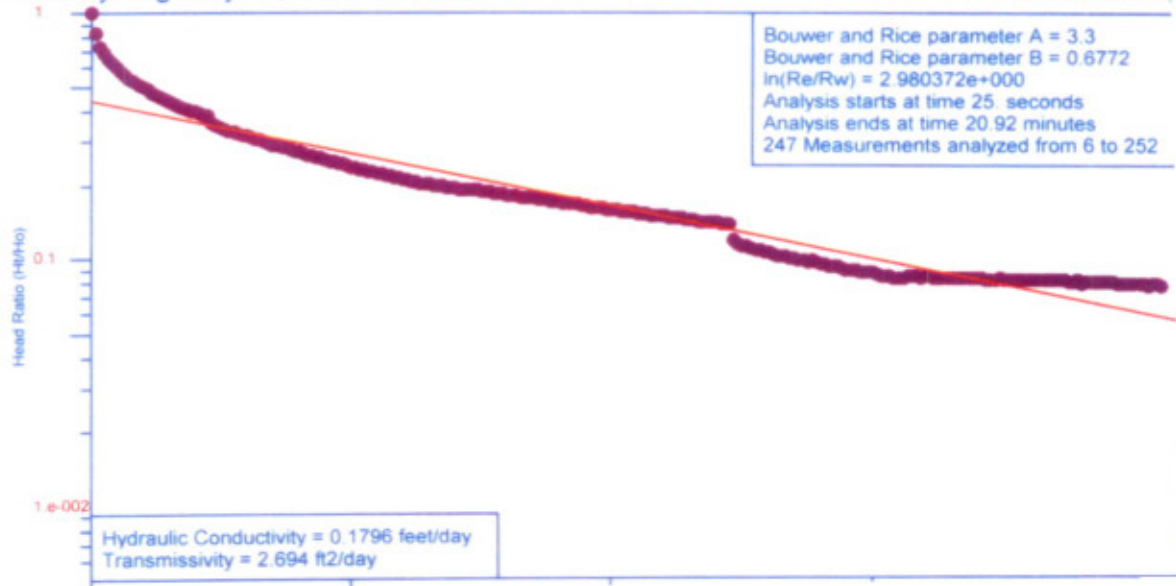
MW-5 Falling Head Test

December 8, 2015

Bouwer and Rice Graph

Grocery Bag Clayton, North Carolina

MW-5 Fallin



Section E

Laboratory Reports



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515

Friday, April 3, 2015

East Coast Environmental (EA030)

Attn: Tom Will

3815 Junction Blvd.

Raleigh, NC 27603

RE: Laboratory Results for

Project Number: [none], Project Name/Desc: Grocery Bag

ENCO Workorder(s): C503654

Dear Tom Will,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, March 19, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Bill Scott

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-1		Lab ID: C503654-01		Sampled: 03/18/15 14:45		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	04/01/15	03/19/15 16:00		03/20/15 10:10			
EPA 6010C	09/14/15	03/25/15 10:20		03/29/15 13:54			
MAVPH	04/01/15	03/25/15 11:21		03/26/15 18:10			
Client ID: MW-1		Lab ID: C503654-01RE1		Sampled: 03/18/15 14:45		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
SM 6200B-1997	04/01/15	03/31/15 15:21		04/01/15 15:18			
Client ID: MW-2		Lab ID: C503654-02		Sampled: 03/18/15 15:00		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	04/01/15	03/19/15 16:00		03/20/15 10:27			
EPA 6010C	09/14/15	03/25/15 10:20		03/29/15 14:03			
MAVPH	04/01/15	03/25/15 11:21		03/26/15 18:41			
SM 6200B-1997	04/01/15	03/29/15 18:10		03/30/15 17:03			
Client ID: MW-3		Lab ID: C503654-03		Sampled: 03/18/15 15:15		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	04/01/15	03/19/15 16:00		03/20/15 10:43			
EPA 6010C	09/14/15	03/25/15 10:20		03/29/15 14:05			
MAVPH	04/01/15	03/25/15 11:21		03/26/15 19:12			
Client ID: MW-3		Lab ID: C503654-03RE1		Sampled: 03/18/15 15:15		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
SM 6200B-1997	04/01/15	03/31/15 12:58		04/01/15 18:12			
Client ID: MW-4		Lab ID: C503654-04		Sampled: 03/18/15 15:30		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	04/01/15	03/19/15 16:00		03/20/15 11:02			
EPA 6010C	09/14/15	03/25/15 10:20		03/29/15 14:08			
MAVPH	04/01/15	03/25/15 11:21		03/26/15 19:43			
Client ID: MW-4		Lab ID: C503654-04RE1		Sampled: 03/18/15 15:30		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
SM 6200B-1997	04/01/15	03/31/15 12:58		04/01/15 18:41			
Client ID: MW-5		Lab ID: C503654-05		Sampled: 03/18/15 15:45		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 6010C	09/14/15	03/25/15 10:20		03/29/15 14:11			
Client ID: MW-5		Lab ID: C503654-05RE1		Sampled: 03/18/15 15:45		Received: 03/19/15 14:00	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
MAVPH	04/01/15	03/25/15 11:21		03/27/15 17:12			
SM 6200B-1997	04/01/15	03/31/15 12:58		04/01/15 20:08			

SAMPLE DETECTION SUMMARY

Client ID: MW-1		Lab ID: C503654-01					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C5-C8 Aliphatics	270	JD	47.0	300	ug/L	MAVPH	
C9-C12 Aliphatics	1260	D	100	300	ug/L	MAVPH	
Lead - Total	48.2		3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-1		Lab ID: C503654-01RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	22	D	0.34	5.0	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	2.5	JD	0.50	5.0	ug/L	SM 6200B-1997	
Benzene	99	D	0.25	5.0	ug/L	SM 6200B-1997	
Ethylbenzene	84	D	0.50	5.0	ug/L	SM 6200B-1997	
Isopropylbenzene	16	D	0.65	5.0	ug/L	SM 6200B-1997	
m,p-Xylenes	38	D	0.90	10	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	46	D	0.60	5.0	ug/L	SM 6200B-1997	
Naphthalene	200	D	0.43	5.0	ug/L	SM 6200B-1997	
n-Propyl Benzene	35	D	0.36	5.0	ug/L	SM 6200B-1997	
o-Xylene	2.8	JD	0.44	5.0	ug/L	SM 6200B-1997	
sec-Butylbenzene	2.3	JD	0.26	5.0	ug/L	SM 6200B-1997	
Toluene	5.8	D	0.26	5.0	ug/L	SM 6200B-1997	
Xylenes (Total)	41	D	1.1	5.0	ug/L	SM 6200B-1997	
Client ID: MW-2		Lab ID: C503654-02					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	10		0.067	1.0	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	1.8		0.10	1.0	ug/L	SM 6200B-1997	
Benzene	0.83	J	0.050	1.0	ug/L	SM 6200B-1997	
C5-C8 Aliphatics	30.3		4.7	30.0	ug/L	MAVPH	
C9-C10 Aromatics	11		4.2	10	ug/L	MAVPH	
C9-C12 Aliphatics	46.4		10.0	30.0	ug/L	MAVPH	
Ethylbenzene	1.4		0.10	1.0	ug/L	SM 6200B-1997	
Isopropylbenzene	0.70	J	0.13	1.0	ug/L	SM 6200B-1997	
Lead - Total	30.0		3.10	10.0	ug/L	EPA 6010C	
m,p-Xylenes	11		0.18	2.0	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	5.0		0.12	1.0	ug/L	SM 6200B-1997	
Naphthalene	6.0		0.086	1.0	ug/L	SM 6200B-1997	
n-Propyl Benzene	0.65	J	0.073	1.0	ug/L	SM 6200B-1997	
o-Xylene	0.55	J	0.088	1.0	ug/L	SM 6200B-1997	
Toluene	0.56	J	0.053	1.0	ug/L	SM 6200B-1997	
Xylenes (Total)	12		0.22	1.0	ug/L	SM 6200B-1997	
Client ID: MW-3		Lab ID: C503654-03					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C5-C8 Aliphatics	359		4.7	30.0	ug/L	MAVPH	
C9-C10 Aromatics	56		4.2	10	ug/L	MAVPH	
C9-C12 Aliphatics	751		10.0	30.0	ug/L	MAVPH	
Lead - Total	3.94	J	3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-3		Lab ID: C503654-03RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	52	D	0.34	5.0	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	9.8	D	0.50	5.0	ug/L	SM 6200B-1997	
Benzene	160	D	0.25	5.0	ug/L	SM 6200B-1997	
Ethylbenzene	51	D	0.50	5.0	ug/L	SM 6200B-1997	
Isopropyl Ether	9.4	D	1.0	5.0	ug/L	SM 6200B-1997	
Isopropylbenzene	4.3	JD	0.65	5.0	ug/L	SM 6200B-1997	
m,p-Xylenes	410	D	0.90	10	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	18	D	0.60	5.0	ug/L	SM 6200B-1997	
Naphthalene	14	D	0.43	5.0	ug/L	SM 6200B-1997	
n-Propyl Benzene	2.6	JD	0.36	5.0	ug/L	SM 6200B-1997	
o-Xylene	7.4	D	0.44	5.0	ug/L	SM 6200B-1997	
Toluene	2.9	JD	0.26	5.0	ug/L	SM 6200B-1997	
Xylenes (Total)	420	D	1.1	5.0	ug/L	SM 6200B-1997	

SAMPLE DETECTION SUMMARY

Client ID: MW-4

Lab ID: C503654-04

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C5-C8 Aliphatics	340		4.7	30.0	ug/L	MAVPH	
C9-C10 Aromatics	30		4.2	10	ug/L	MAVPH	
C9-C12 Aliphatics	470		10.0	30.0	ug/L	MAVPH	

Client ID: MW-4

Lab ID: C503654-04RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	22	D	0.34	5.0	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	4.8	JD	0.50	5.0	ug/L	SM 6200B-1997	
Benzene	17	D	0.25	5.0	ug/L	SM 6200B-1997	
Isopropyl Ether	21	D	1.0	5.0	ug/L	SM 6200B-1997	
m,p-Xylenes	300	D	0.90	10	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	7.6	D	0.60	5.0	ug/L	SM 6200B-1997	
Naphthalene	2.6	JD	0.43	5.0	ug/L	SM 6200B-1997	
Xylenes (Total)	300	D	1.1	5.0	ug/L	SM 6200B-1997	

Client ID: MW-5

Lab ID: C503654-05

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Lead - Total	19.7		3.10	10.0	ug/L	EPA 6010C	

Client ID: MW-5

Lab ID: C503654-05RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	2400	D	3.4	50	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	540	D	5.0	50	ug/L	SM 6200B-1997	
4-Isopropyltoluene	56	D	3.3	50	ug/L	SM 6200B-1997	
Benzene	1200	D	2.5	50	ug/L	SM 6200B-1997	
C5-C8 Aliphatics	5400	D	118	750	ug/L	MAVPH	
C9-C10 Aromatics	2600	D	100	250	ug/L	MAVPH	
C9-C12 Aliphatics	19400	D	250	750	ug/L	MAVPH	
Ethylbenzene	1100	D	5.0	50	ug/L	SM 6200B-1997	
Isopropylbenzene	130	D	6.5	50	ug/L	SM 6200B-1997	
m,p-Xylenes	5100	D	9.0	100	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	43	JD	6.0	50	ug/L	SM 6200B-1997	
Naphthalene	360	D	4.3	50	ug/L	SM 6200B-1997	
n-Propyl Benzene	290	D	3.6	50	ug/L	SM 6200B-1997	
o-Xylene	1500	D	4.4	50	ug/L	SM 6200B-1997	
Toluene	1500	D	2.6	50	ug/L	SM 6200B-1997	
Xylenes (Total)	6700	D	11	50	ug/L	SM 6200B-1997	

ANALYTICAL RESULTS

Description: MW-1

Lab Sample ID: C503654-01

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 14:45

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	5	0.32	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	5	1.2	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	5	0.48	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	22	D	ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	5	2.4	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	5	2.1	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	5	0.49	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	2.5	JD	ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	5	0.33	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Benzene [71-43-2]^	99	D	ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Bromoform [75-25-2]^	ND		ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	5	1.4	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	5	0.90	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Chloroform [67-66-3]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	5	0.38	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Ethylbenzene [100-41-4]^	84	D	ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	5	1.8	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Isopropyl Ether [108-20-3]^	ND		ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Isopropylbenzene [98-82-8]^	16	D	ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	38	D	ug/L	5	0.90	10	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	5	0.35	10	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	

ANALYTICAL RESULTS

Description: MW-1

Lab Sample ID: C503654-01

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 14:45

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	46	D	ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Naphthalene [91-20-3]^	200	D	ug/L	5	0.43	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	5	0.37	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
n-Propyl Benzene [103-65-1]^	35	D	ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
o-Xylene [95-47-6]^	2.8	JD	ug/L	5	0.44	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
sec-Butylbenzene [135-98-8]^	2.3	JD	ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Styrene [100-42-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	5	0.47	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Toluene [108-88-3]^	5.8	D	ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	5	0.40	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Xylenes (Total) [1330-20-7]^	41	D	ug/L	5	1.1	5.0	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	55	1	50.0	111 %	70-130	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Dibromofluoromethane	52	1	50.0	103 %	70-130	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	
Toluene-d8	54	1	50.0	108 %	70-130	5C31033	SM 6200B-1997	04/01/15 15:18	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	270	JD	ug/L	10	47.0	300	5C26010	MAVPH	03/26/15 18:10	GLQ	
C9-C10 Aromatics^	ND		ug/L	10	42	100	5C26010	MAVPH	03/26/15 18:10	GLQ	
C9-C12 Aliphatics^	1260	D	ug/L	10	100	300	5C26010	MAVPH	03/26/15 18:10	GLQ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	97.6	1	100	98 %	70-130	5C26010	MAVPH	03/26/15 18:10	GLQ	
2,5-Dibromotoluene (PID)	94	1	100	94 %	70-130	5C26010	MAVPH	03/26/15 18:10	GLQ	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5C19035	EPA 504.1	03/20/15 10:10	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5C19035	EPA 504.1	03/20/15 10:10	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5C19035	EPA 504.1	03/20/15 10:10	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.28	1	0.250	111 %	70-130	5C19035	EPA 504.1	03/20/15 10:10	BIG	



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ANALYTICAL RESULTS

Description: MW-1

Lab Sample ID: C503654-01

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 14:45

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	48.2		ug/L	1	3.10	10.0	5C25020	EPA 6010C	03/29/15 13:54	JDH	

ANALYTICAL RESULTS

Description: MW-2

Lab Sample ID: C503654-02

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:00

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	10		ug/L	1	0.067	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	1.8		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Benzene [71-43-2]^	0.83	J	ug/L	1	0.050	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Ethanol [64-17-5]^	ND		ug/L	1	26	100	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Ethylbenzene [100-41-4]^	1.4		ug/L	1	0.10	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Isopropyl Ether [108-20-3]^	ND		ug/L	1	0.21	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Isopropylbenzene [98-82-8]^	0.70	J	ug/L	1	0.13	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	11		ug/L	1	0.18	2.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	

ANALYTICAL RESULTS

Description: MW-2

Lab Sample ID: C503654-02

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:00

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Methyl-tert-Butyl Ether [1634-04-4]^	5.0		ug/L	1	0.12	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Naphthalene [91-20-3]^	6.0		ug/L	1	0.086	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
n-Propyl Benzene [103-65-1]^	0.65	J	ug/L	1	0.073	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
o-Xylene [95-47-6]^	0.55	J	ug/L	1	0.088	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	1	0.053	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Toluene [108-88-3]^	0.56	J	ug/L	1	0.053	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Xylenes (Total) [1330-20-7]^	12		ug/L	1	0.22	1.0	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	56	1	50.0	112 %	70-130	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Dibromofluoromethane	51	1	50.0	102 %	70-130	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	
Toluene-d8	56	1	50.0	112 %	70-130	5C30032	SM 6200B-1997	03/30/15 17:03	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	30.3		ug/L	1	4.7	30.0	5C26010	MAVPH	03/26/15 18:41	GLQ	
C9-C10 Aromatics^	11		ug/L	1	4.2	10	5C26010	MAVPH	03/26/15 18:41	GLQ	
C9-C12 Aliphatics^	46.4		ug/L	1	10.0	30.0	5C26010	MAVPH	03/26/15 18:41	GLQ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	101	1	100	101 %	70-130	5C26010	MAVPH	03/26/15 18:41	GLQ	
2,5-Dibromotoluene (PID)	95	1	100	95 %	70-130	5C26010	MAVPH	03/26/15 18:41	GLQ	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5C19035	EPA 504.1	03/20/15 10:27	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5C19035	EPA 504.1	03/20/15 10:27	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5C19035	EPA 504.1	03/20/15 10:27	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.25	1	0.250	101 %	70-130	5C19035	EPA 504.1	03/20/15 10:27	BIG	



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ANALYTICAL RESULTS

Description: MW-2

Lab Sample ID: C503654-02

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:00

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	30.0		ug/L	1	3.10	10.0	5C25020	EPA 6010C	03/29/15 14:03	JDH	

ANALYTICAL RESULTS

Description: MW-3

Lab Sample ID: C503654-03

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:15

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	5	0.32	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	5	1.2	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	5	0.48	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	52	D	ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	5	2.4	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	5	2.1	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	5	0.49	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	9.8	D	ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	5	0.33	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Benzene [71-43-2]^	160	D	ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Bromoform [75-25-2]^	ND		ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	5	1.4	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	5	0.90	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Chloroform [67-66-3]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	5	0.38	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Ethylbenzene [100-41-4]^	51	D	ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	5	1.8	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Isopropyl Ether [108-20-3]^	9.4	D	ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Isopropylbenzene [98-82-8]^	4.3	JD	ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	410	D	ug/L	5	0.90	10	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	5	0.35	10	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	

ANALYTICAL RESULTS

Description: MW-3

Lab Sample ID: C503654-03

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:15

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	18	D	ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Naphthalene [91-20-3]^	14	D	ug/L	5	0.43	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	5	0.37	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
n-Propyl Benzene [103-65-1]^	2.6	JD	ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
o-Xylene [95-47-6]^	7.4	D	ug/L	5	0.44	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Styrene [100-42-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	5	0.47	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Toluene [108-88-3]^	2.9	JD	ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	5	0.40	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Xylenes (Total) [1330-20-7]^	420	D	ug/L	5	1.1	5.0	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	56	1	50.0	113 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Dibromofluoromethane	51	1	50.0	102 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	
Toluene-d8	54	1	50.0	108 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:12	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	359		ug/L	1	4.7	30.0	5C26010	MAVPH	03/26/15 19:12	GLQ	
C9-C10 Aromatics^	56		ug/L	1	4.2	10	5C26010	MAVPH	03/26/15 19:12	GLQ	
C9-C12 Aliphatics^	751		ug/L	1	10.0	30.0	5C26010	MAVPH	03/26/15 19:12	GLQ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	104	1	100	104 %	70-130	5C26010	MAVPH	03/26/15 19:12	GLQ	
2,5-Dibromotoluene (PID)	100	1	100	101 %	70-130	5C26010	MAVPH	03/26/15 19:12	GLQ	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5C19035	EPA 504.1	03/20/15 10:43	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5C19035	EPA 504.1	03/20/15 10:43	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5C19035	EPA 504.1	03/20/15 10:43	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.24	1	0.250	95 %	70-130	5C19035	EPA 504.1	03/20/15 10:43	BIG	



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ANALYTICAL RESULTS

Description: MW-3

Lab Sample ID: C503654-03

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:15

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	3.94	J	ug/L	1	3.10	10.0	5C25020	EPA 6010C	03/29/15 14:05	JDH	

ANALYTICAL RESULTS

Description: MW-4

Lab Sample ID: C503654-04

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:30

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	5	0.32	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	5	1.2	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	5	0.48	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	22	D	ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	5	2.4	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	5	2.1	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	5	0.49	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	4.8	JD	ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	5	0.33	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Benzene [71-43-2]^	17	D	ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Bromoform [75-25-2]^	ND		ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	5	1.4	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	5	0.90	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Chloroform [67-66-3]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	5	0.25	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	5	0.38	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	5	0.34	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	5	0.46	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Ethylbenzene [100-41-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	5	1.8	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Isopropyl Ether [108-20-3]^	21	D	ug/L	5	1.0	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Isopropylbenzene [98-82-8]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	300	D	ug/L	5	0.90	10	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	5	0.35	10	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	

ANALYTICAL RESULTS

Description: MW-4

Lab Sample ID: C503654-04

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:30

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	7.6	D	ug/L	5	0.60	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Naphthalene [91-20-3]^	2.6	JD	ug/L	5	0.43	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	5	0.37	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
n-Propyl Benzene [103-65-1]^	ND		ug/L	5	0.36	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
o-Xylene [95-47-6]^	ND		ug/L	5	0.44	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Styrene [100-42-5]^	ND		ug/L	5	0.41	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	5	0.47	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	5	0.50	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Toluene [108-88-3]^	ND		ug/L	5	0.26	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	5	0.55	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	5	0.40	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	5	0.65	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	5	0.75	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	5	0.42	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Xylenes (Total) [1330-20-7]^	300	D	ug/L	5	1.1	5.0	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	57	1	50.0	113 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Dibromofluoromethane	51	1	50.0	102 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	
Toluene-d8	55	1	50.0	110 %	70-130	5C31033	SM 6200B-1997	04/01/15 18:41	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	340		ug/L	1	4.7	30.0	5C26010	MAVPH	03/26/15 19:43	GLQ	
C9-C10 Aromatics^	30		ug/L	1	4.2	10	5C26010	MAVPH	03/26/15 19:43	GLQ	
C9-C12 Aliphatics^	470		ug/L	1	10.0	30.0	5C26010	MAVPH	03/26/15 19:43	GLQ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	95.3	1	100	95 %	70-130	5C26010	MAVPH	03/26/15 19:43	GLQ	
2,5-Dibromotoluene (PID)	90	1	100	90 %	70-130	5C26010	MAVPH	03/26/15 19:43	GLQ	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5C19035	EPA 504.1	03/20/15 11:02	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5C19035	EPA 504.1	03/20/15 11:02	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5C19035	EPA 504.1	03/20/15 11:02	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.23	1	0.250	92 %	70-130	5C19035	EPA 504.1	03/20/15 11:02	BIG	



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ANALYTICAL RESULTS

Description: MW-4

Lab Sample ID: C503654-04

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:30

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	ND		ug/L	1	3.10	10.0	5C25020	EPA 6010C	03/29/15 14:08	JDH	

ANALYTICAL RESULTS

Description: MW-5

Lab Sample ID: C503654-05

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:45

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	50	4.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	50	4.2	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	50	3.4	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	50	2.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	50	3.2	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	50	12	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	50	4.8	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	2400	D	ug/L	50	3.4	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	50	24	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	50	21	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	50	2.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	50	4.1	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	50	4.9	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	540	D	ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	50	4.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	50	6.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
4-Isopropyltoluene [99-87-6]^	56	D	ug/L	50	3.3	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Benzene [71-43-2]^	1200	D	ug/L	50	2.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	50	6.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	50	5.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Bromoform [75-25-2]^	ND		ug/L	50	10	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	50	14	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	50	4.1	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	50	3.4	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	50	9.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Chloroform [67-66-3]^	ND		ug/L	50	4.2	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	50	2.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	50	3.8	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	50	3.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	50	3.4	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	50	6.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	50	4.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Ethylbenzene [100-41-4]^	1100	D	ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	50	18	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Isopropyl Ether [108-20-3]^	ND		ug/L	50	10	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Isopropylbenzene [98-82-8]^	130	D	ug/L	50	6.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	5100	D	ug/L	50	9.0	100	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	50	3.5	100	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	

ANALYTICAL RESULTS

Description: MW-5

Lab Sample ID: C503654-05

Received: 03/19/15 14:00

Matrix: Water

Sampled: 03/18/15 15:45

Work Order: C503654

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	43	JD	ug/L	50	6.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Naphthalene [91-20-3]^	360	D	ug/L	50	4.3	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	50	3.7	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
n-Propyl Benzene [103-65-1]^	290	D	ug/L	50	3.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
o-Xylene [95-47-6]^	1500	D	ug/L	50	4.4	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	50	2.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Styrene [100-42-5]^	ND		ug/L	50	4.1	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	50	4.7	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	50	5.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Toluene [108-88-3]^	1500	D	ug/L	50	2.6	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	50	5.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	50	4.0	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	50	6.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	50	7.5	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	50	4.2	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Xylenes (Total) [1330-20-7]^	6700	D	ug/L	50	11	50	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	56	1	50.0	112 %	70-130	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Dibromofluoromethane	52	1	50.0	104 %	70-130	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	
Toluene-d8	57	1	50.0	114 %	70-130	5C31033	SM 6200B-1997	04/01/15 20:08	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	5400	D	ug/L	25	118	750	5C27012	MAVPH	03/27/15 17:12	GLQ	
C9-C10 Aromatics^	2600	D	ug/L	25	100	250	5C27012	MAVPH	03/27/15 17:12	GLQ	
C9-C12 Aliphatics^	19400	D	ug/L	25	250	750	5C27012	MAVPH	03/27/15 17:12	GLQ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	99.9	1	100	100 %	70-130	5C27012	MAVPH	03/27/15 17:12	GLQ	
2,5-Dibromotoluene (PID)	94	1	100	94 %	70-130	5C27012	MAVPH	03/27/15 17:12	GLQ	

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Lead [7439-92-1]^	19.7		ug/L	1	3.10	10.0	5C25020	EPA 6010C	03/29/15 14:11	JDH	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS

Blank (5C30032-BLK1)

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 10:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS - Continued

Blank (5C30032-BLK1) Continued

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 10:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	56			ug/L	50.0		113	70-130			
Dibromofluoromethane	53			ug/L	50.0		105	70-130			
Toluene-d8	56			ug/L	50.0		112	70-130			

LCS (5C30032-BS1)

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 10:40

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	23		1.0	ug/L	20.0		113	70-130			
1,1,1-Trichloroethane	22		1.0	ug/L	20.0		111	70-130			
1,1,2,2-Tetrachloroethane	20		1.0	ug/L	20.0		99	70-130			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0		97	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		97	70-130			
1,1-Dichloroethene	23		1.0	ug/L	20.0		114	70-130			
1,1-Dichloropropene	21		1.0	ug/L	20.0		104	70-130			
1,2,3-Trichlorobenzene	19		1.0	ug/L	20.0		96	70-130			
1,2,3-Trichloropropane	21		1.0	ug/L	20.0		103	70-130			
1,2,4-Trichlorobenzene	23		1.0	ug/L	20.0		113	70-130			
1,2,4-Trimethylbenzene	19		1.0	ug/L	20.0		97	70-130			
1,2-Dibromo-3-chloropropane	19		1.0	ug/L	20.0		97	70-130			
1,2-Dibromoethane	20		1.0	ug/L	20.0		101	70-130			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0		110	70-130			
1,2-Dichloroethane	25		1.0	ug/L	20.0		123	70-130			
1,2-Dichloropropane	21		1.0	ug/L	20.0		105	70-130			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0		92	70-130			
1,3-Dichlorobenzene	23		1.0	ug/L	20.0		117	70-130			
1,3-Dichloropropane	20		1.0	ug/L	20.0		101	70-130			
1,4-Dichlorobenzene	20		1.0	ug/L	20.0		101	70-130			
2,2-Dichloropropane	23		1.0	ug/L	20.0		117	70-130			
2-Chlorotoluene	22		1.0	ug/L	20.0		109	70-130			
4-Chlorotoluene	20		1.0	ug/L	20.0		99	70-130			
4-Isopropyltoluene	23		1.0	ug/L	20.0		114	70-130			
Benzene	21		1.0	ug/L	20.0		103	70-130			
Bromobenzene	22		1.0	ug/L	20.0		112	70-130			
Bromochloromethane	21		1.0	ug/L	20.0		107	70-130			
Bromodichloromethane	23		1.0	ug/L	20.0		113	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS - Continued

LCS (5C30032-BS1) Continued

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 10:40

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromoform	21		1.0	ug/L	20.0		107	70-130			
Bromomethane	24		1.0	ug/L	20.0		118	60-140			
Carbon Tetrachloride	27		1.0	ug/L	20.0		135	70-130			QL-02
Chlorobenzene	22		1.0	ug/L	20.0		110	70-130			
Chloroethane	24		1.0	ug/L	20.0		118	60-140			
Chloroform	20		1.0	ug/L	20.0		101	70-130			
Chloromethane	21		1.0	ug/L	20.0		105	60-140			
cis-1,2-Dichloroethene	19		1.0	ug/L	20.0		93	70-130			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0		105	70-130			
Dibromochloromethane	23		1.0	ug/L	20.0		117	70-130			
Dibromomethane	21		1.0	ug/L	20.0		106	70-130			
Dichlorodifluoromethane	23		1.0	ug/L	20.0		113	60-140			
Ethylbenzene	20		1.0	ug/L	20.0		101	70-130			
Freon 113	41		1.0	ug/L	40.0		103	70-130			
Hexachlorobutadiene	24		1.0	ug/L	20.0		122	70-130			
Isopropyl Ether	21		1.0	ug/L	20.0		104	70-130			
Isopropylbenzene	24		1.0	ug/L	20.0		118	70-130			
m,p-Xylenes	43		2.0	ug/L	40.0		108	70-130			
Methylene Chloride	20		2.0	ug/L	20.0		99	70-130			
Methyl-tert-Butyl Ether	20		1.0	ug/L	20.0		102	70-130			
Naphthalene	18		1.0	ug/L	20.0		90	70-130			
n-Butyl Benzene	20		1.0	ug/L	20.0		100	70-130			
n-Propyl Benzene	24		1.0	ug/L	20.0		118	70-130			
o-Xylene	23		1.0	ug/L	20.0		117	70-130			
sec-Butylbenzene	22		1.0	ug/L	20.0		109	70-130			
Styrene	21		1.0	ug/L	20.0		105	70-130			
tert-Butylbenzene	22		1.0	ug/L	20.0		109	70-130			
Tetrachloroethene	24		1.0	ug/L	20.0		119	70-130			
Toluene	21		1.0	ug/L	20.0		103	70-130			
trans-1,2-Dichloroethene	21		1.0	ug/L	20.0		103	70-130			
trans-1,3-Dichloropropene	22		1.0	ug/L	20.0		109	70-130			
Trichloroethene	23		1.0	ug/L	20.0		114	70-130			
Trichlorofluoromethane	25		1.0	ug/L	20.0		124	60-140			
Vinyl chloride	24		1.0	ug/L	20.0		118	60-140			
Xylenes (Total)	66		1.0	ug/L	60.0		111	70-130			
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	54			ug/L	50.0		108	70-130			
Toluene-d8	55			ug/L	50.0		111	70-130			

Matrix Spike (5C30032-MS1)

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 11:09

Source: C503934-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0	0.091 U	107	71-117			
1,1,1-Trichloroethane	22		1.0	ug/L	20.0	0.15 U	111	72-143			
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	94	59-133			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	99	67-118			
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	96	79-141			
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.15 U	112	75-133			
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	106	70-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS - Continued

Matrix Spike (5C30032-MS1) Continued

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 11:09

Source: C503934-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0	0.25 U	99	62-117			
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	95	58-140			
1,2,4-Trichlorobenzene	21		1.0	ug/L	20.0	0.097 U	104	59-122			
1,2,4-Trimethylbenzene	19		1.0	ug/L	20.0	0.067 U	94	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	83	37-157			
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	98	66-123			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0	0.052 U	108	76-116			
1,2-Dichloroethane	23		1.0	ug/L	20.0	0.082 U	115	72-151			
1,2-Dichloropropane	21		1.0	ug/L	20.0	0.098 U	107	78-125			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	92	77-129			
1,3-Dichlorobenzene	23		1.0	ug/L	20.0	0.092 U	113	76-119			
1,3-Dichloropropane	20		1.0	ug/L	20.0	0.15 U	102	60-129			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	96	76-122			
2,2-Dichloropropane	23		1.0	ug/L	20.0	0.12 U	114	21-167			
2-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	97	73-135			
4-Chlorotoluene	20		1.0	ug/L	20.0	0.10 U	98	76-134			
4-Isopropyltoluene	22		1.0	ug/L	20.0	0.066 U	110	75-127			
Benzene	20		1.0	ug/L	20.0	0.050 U	101	81-134			
Bromobenzene	22		1.0	ug/L	20.0	0.13 U	112	72-115			
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	106	74-128			
Bromodichloromethane	23		1.0	ug/L	20.0	0.10 U	114	72-129			
Bromoform	21		1.0	ug/L	20.0	0.20 U	105	73-119			
Bromomethane	25		1.0	ug/L	20.0	0.28 U	124	38-189			
Carbon Tetrachloride	26		1.0	ug/L	20.0	0.082 U	131	68-142			
Chlorobenzene	22		1.0	ug/L	20.0	0.069 U	108	83-117			
Chloroethane	23		1.0	ug/L	20.0	0.18 U	114	45-213			
Chloroform	20		1.0	ug/L	20.0	0.083 U	99	78-138			
Chloromethane	20		1.0	ug/L	20.0	0.050 U	101	56-171			
cis-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.075 U	94	69-120			
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	101	63-125			
Dibromochloromethane	22		1.0	ug/L	20.0	0.067 U	110	73-117			
Dibromomethane	21		1.0	ug/L	20.0	0.13 U	103	76-124			
Dichlorodifluoromethane	21		1.0	ug/L	20.0	0.091 U	103	25-161			
Ethylbenzene	20		1.0	ug/L	20.0	0.10 U	100	68-124			
Freon 113	39		1.0	ug/L	40.0	0.35 U	98	0-200			
Hexachlorobutadiene	22		1.0	ug/L	20.0	0.15 U	110	63-114			
Isopropyl Ether	19		1.0	ug/L	20.0	0.21 U	97	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	116	81-136			
m,p-Xylenes	42		2.0	ug/L	40.0	0.18 U	105	79-121			
Methylene Chloride	20		2.0	ug/L	20.0	0.070 U	98	68-128			
Methyl-tert-Butyl Ether	19		1.0	ug/L	20.0	0.12 U	95	10-127			
Naphthalene	17		1.0	ug/L	20.0	0.086 U	86	50-127			
n-Butyl Benzene	19		1.0	ug/L	20.0	0.074 U	97	68-126			
n-Propyl Benzene	23		1.0	ug/L	20.0	0.073 U	115	76-125			
o-Xylene	23		1.0	ug/L	20.0	0.088 U	116	71-125			
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	105	75-122			
Styrene	20		1.0	ug/L	20.0	0.082 U	101	73-120			
tert-Butylbenzene	21		1.0	ug/L	20.0	0.094 U	103	70-137			
Tetrachloroethene	23		1.0	ug/L	20.0	0.099 U	113	40-181			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS - Continued

Matrix Spike (5C30032-MS1) Continued

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 11:09

Source: C503934-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene	20		1.0	ug/L	20.0	0.053 U	100	71-118			
trans-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.11 U	99	75-139			
trans-1,3-Dichloropropene	22		1.0	ug/L	20.0	0.080 U	110	62-152			
Trichloroethene	23		1.0	ug/L	20.0	0.13 U	117	75-115			QM-07
Trichlorofluoromethane	24		1.0	ug/L	20.0	0.15 U	119	68-183			
Vinyl chloride	22		1.0	ug/L	20.0	0.083 U	109	49-150			
Xylenes (Total)	65		1.0	ug/L	60.0	0.22 U	109	77-121			
4-Bromofluorobenzene	57			ug/L	50.0		115	70-130			
Dibromofluoromethane	52			ug/L	50.0		105	70-130			
Toluene-d8	55			ug/L	50.0		110	70-130			

Matrix Spike Dup (5C30032-MSD1)

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 11:38

Source: C503934-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	22		1.0	ug/L	20.0	0.091 U	108	71-117	1	16	
1,1,1-Trichloroethane	21		1.0	ug/L	20.0	0.15 U	107	72-143	3	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	95	59-133	2	16	
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	95	67-118	4	18	
1,1-Dichloroethane	18		1.0	ug/L	20.0	0.050 U	90	79-141	7	19	
1,1-Dichloroethene	21		1.0	ug/L	20.0	0.15 U	105	75-133	6	20	
1,1-Dichloropropene	20		1.0	ug/L	20.0	0.063 U	102	70-129	4	17	
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0	0.25 U	99	62-117	0.2	17	
1,2,3-Trichloropropane	20		1.0	ug/L	20.0	0.15 U	98	58-140	4	17	
1,2,4-Trichlorobenzene	21		1.0	ug/L	20.0	0.097 U	107	59-122	3	17	
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	92	74-123	2	18	
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	87	37-157	4	18	
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	95	66-123	4	15	
1,2-Dichlorobenzene	22		1.0	ug/L	20.0	0.052 U	109	76-116	0.4	16	
1,2-Dichloroethane	25		1.0	ug/L	20.0	0.082 U	124	72-151	7	16	
1,2-Dichloropropane	21		1.0	ug/L	20.0	0.098 U	105	78-125	2	19	
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	89	77-129	3	16	
1,3-Dichlorobenzene	22		1.0	ug/L	20.0	0.092 U	112	76-119	0.4	17	
1,3-Dichloropropane	20		1.0	ug/L	20.0	0.15 U	98	60-129	4	16	
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	101	76-122	4	16	
2,2-Dichloropropane	22		1.0	ug/L	20.0	0.12 U	112	21-167	2	20	
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	107	73-135	9	16	
4-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	96	76-134	2	16	
4-Isopropyltoluene	21		1.0	ug/L	20.0	0.066 U	104	75-127	6	17	
Benzene	20		1.0	ug/L	20.0	0.050 U	98	81-134	2	17	
Bromobenzene	23		1.0	ug/L	20.0	0.13 U	114	72-115	1	17	
Bromochloromethane	20		1.0	ug/L	20.0	0.11 U	100	74-128	6	18	
Bromodichloromethane	22		1.0	ug/L	20.0	0.10 U	108	72-129	6	16	
Bromoform	20		1.0	ug/L	20.0	0.20 U	101	73-119	3	44	
Bromomethane	24		1.0	ug/L	20.0	0.28 U	122	38-189	2	27	
Carbon Tetrachloride	24		1.0	ug/L	20.0	0.082 U	120	68-142	9	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	104	83-117	3	16	
Chloroethane	22		1.0	ug/L	20.0	0.18 U	112	45-213	1	26	
Chloroform	19		1.0	ug/L	20.0	0.083 U	94	78-138	5	17	
Chloromethane	19		1.0	ug/L	20.0	0.050 U	95	56-171	7	28	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30032 - EPA 5030B_MS - Continued

Matrix Spike Dup (5C30032-MSD1) Continued

Prepared: 03/30/2015 08:33 Analyzed: 03/30/2015 11:38

Source: C503934-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.075 U	85	69-120	10	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	101	63-125	0.05	17	
Dibromochloromethane	22		1.0	ug/L	20.0	0.067 U	112	73-117	1	16	
Dibromomethane	21		1.0	ug/L	20.0	0.13 U	107	76-124	3	15	
Dichlorodifluoromethane	21		1.0	ug/L	20.0	0.091 U	105	25-161	2	48	
Ethylbenzene	19		1.0	ug/L	20.0	0.10 U	93	68-124	7	16	
Freon 113	39		1.0	ug/L	40.0	0.35 U	97	0-200	0.8	25	
Hexachlorobutadiene	24		1.0	ug/L	20.0	0.15 U	118	63-114	7	19	QM-07
Isopropyl Ether	19		1.0	ug/L	20.0	0.21 U	96	70-130	0.8	30	
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	113	81-136	2	16	
m,p-Xylenes	42		2.0	ug/L	40.0	0.18 U	105	79-121	0.1	16	
Methylene Chloride	18		2.0	ug/L	20.0	0.070 U	91	68-128	7	17	
Methyl-tert-Butyl Ether	19		1.0	ug/L	20.0	0.12 U	97	10-127	2	21	
Naphthalene	18		1.0	ug/L	20.0	0.086 U	90	50-127	4	19	
n-Butyl Benzene	19		1.0	ug/L	20.0	0.074 U	94	68-126	3	15	
n-Propyl Benzene	23		1.0	ug/L	20.0	0.073 U	114	76-125	0.8	16	
o-Xylene	22		1.0	ug/L	20.0	0.088 U	112	71-125	3	15	
sec-Butylbenzene	20		1.0	ug/L	20.0	0.053 U	102	75-122	3	17	
Styrene	20		1.0	ug/L	20.0	0.082 U	99	73-120	3	23	
tert-Butylbenzene	21		1.0	ug/L	20.0	0.094 U	103	70-137	0.3	22	
Tetrachloroethene	23		1.0	ug/L	20.0	0.099 U	114	40-181	0.9	26	
Toluene	19		1.0	ug/L	20.0	0.053 U	97	71-118	2	17	
trans-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.11 U	99	75-139	0.05	19	
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.080 U	102	62-152	8	16	
Trichloroethene	23		1.0	ug/L	20.0	0.13 U	115	75-115	1	18	
Trichlorofluoromethane	23		1.0	ug/L	20.0	0.15 U	114	68-183	4	22	
Vinyl chloride	21		1.0	ug/L	20.0	0.083 U	107	49-150	2	27	
Xylenes (Total)	64		1.0	ug/L	60.0	0.22 U	107	77-121	1	16	
4-Bromofluorobenzene	58			ug/L	50.0		115	70-130			
Dibromofluoromethane	52			ug/L	50.0		105	70-130			
Toluene-d8	56			ug/L	50.0		111	70-130			

Batch 5C30036 - EPA 5030B_MS

Blank (5C30036-BLK1)

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 09:41

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

Blank (5C30036-BLK1) Continued

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 09:41

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

Blank (5C30036-BLK1) Continued

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 09:41

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	44			ug/L	50.0		88	70-130			
Dibromofluoromethane	60			ug/L	50.0		119	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

LCS (5C30036-BS1)

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 11:10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0		106	70-130			
1,1,1-Trichloroethane	22		1.0	ug/L	20.0		108	70-130			
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0		94	70-130			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		96	70-130			
1,1-Dichloroethene	21		1.0	ug/L	20.0		104	70-130			
1,1-Dichloropropene	21		1.0	ug/L	20.0		106	70-130			
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0		100	70-130			
1,2,3-Trichloropropane	20		1.0	ug/L	20.0		98	70-130			
1,2,4-Trichlorobenzene	20		1.0	ug/L	20.0		102	70-130			
1,2,4-Trimethylbenzene	20		1.0	ug/L	20.0		102	70-130			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0		87	70-130			
1,2-Dibromoethane	21		1.0	ug/L	20.0		106	70-130			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0		109	70-130			
1,2-Dichloroethane	21		1.0	ug/L	20.0		106	70-130			
1,2-Dichloropropane	18		1.0	ug/L	20.0		89	70-130			
1,3,5-Trimethylbenzene	19		1.0	ug/L	20.0		95	70-130			
1,3-Dichlorobenzene	22		1.0	ug/L	20.0		108	70-130			
1,3-Dichloropropane	18		1.0	ug/L	20.0		91	70-130			
1,4-Dichlorobenzene	21		1.0	ug/L	20.0		103	70-130			
2,2-Dichloropropane	17		1.0	ug/L	20.0		85	70-130			
2-Chlorotoluene	20		1.0	ug/L	20.0		101	70-130			
4-Chlorotoluene	21		1.0	ug/L	20.0		107	70-130			
4-Isopropyltoluene	22		1.0	ug/L	20.0		110	70-130			
Benzene	21		1.0	ug/L	20.0		104	70-130			
Bromobenzene	22		1.0	ug/L	20.0		108	70-130			
Bromochloromethane	25		1.0	ug/L	20.0		126	70-130			
Bromodichloromethane	23		1.0	ug/L	20.0		116	70-130			
Bromoform	21		1.0	ug/L	20.0		106	70-130			
Bromomethane	21		1.0	ug/L	20.0		105	60-140			
Carbon Tetrachloride	21		1.0	ug/L	20.0		105	70-130			
Chlorobenzene	22		1.0	ug/L	20.0		108	70-130			
Chloroethane	23		1.0	ug/L	20.0		115	60-140			
Chloroform	20		1.0	ug/L	20.0		102	70-130			
Chloromethane	17		1.0	ug/L	20.0		84	60-140			
cis-1,2-Dichloroethene	22		1.0	ug/L	20.0		110	70-130			
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0		94	70-130			
Dibromochloromethane	21		1.0	ug/L	20.0		107	70-130			
Dibromomethane	21		1.0	ug/L	20.0		104	70-130			
Dichlorodifluoromethane	21		1.0	ug/L	20.0		103	60-140			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

LCS (5C30036-BS1) Continued

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 11:10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Ethylbenzene	19		1.0	ug/L	20.0		96	70-130			
Freon 113	52		1.0	ug/L	40.0		129	70-130			
Hexachlorobutadiene	21		1.0	ug/L	20.0		107	70-130			
Isopropyl Ether	15		1.0	ug/L	20.0		76	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0		90	70-130			
m,p-Xylenes	35		2.0	ug/L	40.0		88	70-130			
Methylene Chloride	15		2.0	ug/L	20.0		76	70-130			
Methyl-tert-Butyl Ether	19		1.0	ug/L	20.0		97	70-130			
Naphthalene	16		1.0	ug/L	20.0		81	70-130			
n-Butyl Benzene	20		1.0	ug/L	20.0		98	70-130			
n-Propyl Benzene	18		1.0	ug/L	20.0		91	70-130			
o-Xylene	21		1.0	ug/L	20.0		105	70-130			
sec-Butylbenzene	22		1.0	ug/L	20.0		112	70-130			
Styrene	20		1.0	ug/L	20.0		102	70-130			
tert-Butylbenzene	21		1.0	ug/L	20.0		106	70-130			
Tetrachloroethene	24		1.0	ug/L	20.0		122	70-130			
Toluene	20		1.0	ug/L	20.0		100	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		94	70-130			
trans-1,3-Dichloropropene	17		1.0	ug/L	20.0		86	70-130			
Trichloroethene	25		1.0	ug/L	20.0		123	70-130			
Trichlorofluoromethane	26		1.0	ug/L	20.0		131	60-140			
Vinyl chloride	22		1.0	ug/L	20.0		110	60-140			
Xylenes (Total)	56		1.0	ug/L	60.0		94	70-130			
4-Bromofluorobenzene	46			ug/L	50.0		92	70-130			
Dibromofluoromethane	54			ug/L	50.0		108	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

Matrix Spike (5C30036-MS1)

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 10:40

Source: C503934-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0	0.091 U	104	71-117			
1,1,1-Trichloroethane	22		1.0	ug/L	20.0	0.15 U	109	72-143			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	90	59-133			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	99	67-118			
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	96	79-141			
1,1-Dichloroethene	20		1.0	ug/L	20.0	0.15 U	101	75-133			
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	107	70-129			
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0	0.25 U	99	62-117			
1,2,3-Trichloropropane	20		1.0	ug/L	20.0	0.15 U	102	58-140			
1,2,4-Trichlorobenzene	19		1.0	ug/L	20.0	0.097 U	97	59-122			
1,2,4-Trimethylbenzene	20		1.0	ug/L	20.0	0.067 U	98	74-123			
1,2-Dibromo-3-chloropropane	18		1.0	ug/L	20.0	0.48 U	88	37-157			
1,2-Dibromoethane	22		1.0	ug/L	20.0	0.42 U	108	66-123			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0	0.052 U	110	76-116			
1,2-Dichloroethane	21		1.0	ug/L	20.0	0.082 U	107	72-151			
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	87	78-125			
1,3,5-Trimethylbenzene	19		1.0	ug/L	20.0	0.10 U	94	77-129			
1,3-Dichlorobenzene	22		1.0	ug/L	20.0	0.092 U	108	76-119			
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	93	60-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

Matrix Spike (5C30036-MS1) Continued

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 10:40

Source: C503934-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	100	76-122			
2,2-Dichloropropane	12		1.0	ug/L	20.0	0.12 U	61	21-167			
2-Chlorotoluene	20		1.0	ug/L	20.0	0.10 U	99	73-135			
4-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	103	76-134			
4-Isopropyltoluene	21		1.0	ug/L	20.0	0.066 U	104	75-127			
Benzene	21		1.0	ug/L	20.0	0.050 U	107	81-134			
Bromobenzene	21		1.0	ug/L	20.0	0.13 U	103	72-115			
Bromochloromethane	24		1.0	ug/L	20.0	0.11 U	121	74-128			
Bromodichloromethane	24		1.0	ug/L	20.0	0.10 U	122	72-129			
Bromoform	22		1.0	ug/L	20.0	0.20 U	111	73-119			
Bromomethane	22		1.0	ug/L	20.0	0.28 U	110	38-189			
Carbon Tetrachloride	23		1.0	ug/L	20.0	0.082 U	113	68-142			
Chlorobenzene	22		1.0	ug/L	20.0	0.069 U	108	83-117			
Chloroethane	23		1.0	ug/L	20.0	0.18 U	117	45-213			
Chloroform	21		1.0	ug/L	20.0	0.083 U	106	78-138			
Chloromethane	16		1.0	ug/L	20.0	0.050 U	82	56-171			
cis-1,2-Dichloroethene	22		1.0	ug/L	20.0	0.075 U	111	69-120			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	91	63-125			
Dibromochloromethane	22		1.0	ug/L	20.0	0.067 U	110	73-117			
Dibromomethane	21		1.0	ug/L	20.0	0.13 U	103	76-124			
Dichlorodifluoromethane	19		1.0	ug/L	20.0	0.091 U	97	25-161			
Ethylbenzene	19		1.0	ug/L	20.0	0.10 U	95	68-124			
Freon 113	47		1.0	ug/L	40.0	0.35 U	116	0-200			
Hexachlorobutadiene	20		1.0	ug/L	20.0	0.15 U	101	63-114			
Isopropyl Ether	15		1.0	ug/L	20.0	0.21 U	76	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	90	81-136			
m,p-Xylenes	35		2.0	ug/L	40.0	0.18 U	87	79-121			
Methylene Chloride	15		2.0	ug/L	20.0	0.070 U	74	68-128			
Methyl-tert-Butyl Ether	20		1.0	ug/L	20.0	0.12 U	98	10-127			
Naphthalene	16		1.0	ug/L	20.0	0.086 U	79	50-127			
n-Butyl Benzene	18		1.0	ug/L	20.0	0.074 U	91	68-126			
n-Propyl Benzene	18		1.0	ug/L	20.0	0.073 U	88	76-125			
o-Xylene	21		1.0	ug/L	20.0	0.088 U	104	71-125			
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	104	75-122			
Styrene	20		1.0	ug/L	20.0	0.082 U	99	73-120			
tert-Butylbenzene	21		1.0	ug/L	20.0	0.094 U	106	70-137			
Tetrachloroethene	27		1.0	ug/L	20.0	0.099 U	137	40-181			
Toluene	20		1.0	ug/L	20.0	0.053 U	99	71-118			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	97	75-139			
trans-1,3-Dichloropropene	17		1.0	ug/L	20.0	0.080 U	83	62-152			
Trichloroethene	24		1.0	ug/L	20.0	0.13 U	122	75-115			QM-07
Trichlorofluoromethane	26		1.0	ug/L	20.0	0.15 U	132	68-183			
Vinyl chloride	23		1.0	ug/L	20.0	0.083 U	114	49-150			
Xylenes (Total)	55		1.0	ug/L	60.0	0.22 U	92	77-121			
4-Bromofluorobenzene	47			ug/L	50.0		93	70-130			
Dibromofluoromethane	54			ug/L	50.0		109	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

Matrix Spike Dup (5C30036-MSD1)

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 10:11

Source: C503934-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	22		1.0	ug/L	20.0	0.091 U	111	71-117	6	16	
1,1,1-Trichloroethane	21		1.0	ug/L	20.0	0.15 U	107	72-143	2	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133	6	16	
1,1,2-Trichloroethane	21		1.0	ug/L	20.0	0.068 U	104	67-118	5	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	97	79-141	1	19	
1,1-Dichloroethene	20		1.0	ug/L	20.0	0.15 U	101	75-133	0.3	20	
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	105	70-129	2	17	
1,2,3-Trichlorobenzene	19		1.0	ug/L	20.0	0.25 U	96	62-117	3	17	
1,2,3-Trichloropropane	20		1.0	ug/L	20.0	0.15 U	100	58-140	2	17	
1,2,4-Trichlorobenzene	19		1.0	ug/L	20.0	0.097 U	95	59-122	2	17	
1,2,4-Trimethylbenzene	20		1.0	ug/L	20.0	0.067 U	100	74-123	2	18	
1,2-Dibromo-3-chloropropane	19		1.0	ug/L	20.0	0.48 U	93	37-157	5	18	
1,2-Dibromoethane	21		1.0	ug/L	20.0	0.42 U	105	66-123	2	15	
1,2-Dichlorobenzene	22		1.0	ug/L	20.0	0.052 U	108	76-116	2	16	
1,2-Dichloroethane	22		1.0	ug/L	20.0	0.082 U	110	72-151	3	16	
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	86	78-125	1	19	
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	92	77-129	2	16	
1,3-Dichlorobenzene	22		1.0	ug/L	20.0	0.092 U	108	76-119	0.6	17	
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	91	60-129	2	16	
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	100	76-122	0.2	16	
2,2-Dichloropropane	12		1.0	ug/L	20.0	0.12 U	60	21-167	2	20	
2-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	96	73-135	3	16	
4-Chlorotoluene	20		1.0	ug/L	20.0	0.10 U	101	76-134	1	16	
4-Isopropyltoluene	21		1.0	ug/L	20.0	0.066 U	106	75-127	2	17	
Benzene	21		1.0	ug/L	20.0	0.050 U	104	81-134	3	17	
Bromobenzene	21		1.0	ug/L	20.0	0.13 U	106	72-115	3	17	
Bromochloromethane	25		1.0	ug/L	20.0	0.11 U	127	74-128	5	18	
Bromodichloromethane	25		1.0	ug/L	20.0	0.10 U	123	72-129	0.4	16	
Bromoform	22		1.0	ug/L	20.0	0.20 U	112	73-119	1	44	
Bromomethane	20		1.0	ug/L	20.0	0.28 U	101	38-189	9	27	
Carbon Tetrachloride	22		1.0	ug/L	20.0	0.082 U	109	68-142	4	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	107	83-117	0.9	16	
Chloroethane	23		1.0	ug/L	20.0	0.18 U	113	45-213	4	26	
Chloroform	20		1.0	ug/L	20.0	0.083 U	101	78-138	5	17	
Chloromethane	14		1.0	ug/L	20.0	0.050 U	68	56-171	18	28	
cis-1,2-Dichloroethene	22		1.0	ug/L	20.0	0.075 U	108	69-120	3	18	
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	90	63-125	2	17	
Dibromochloromethane	22		1.0	ug/L	20.0	0.067 U	112	73-117	1	16	
Dibromomethane	21		1.0	ug/L	20.0	0.13 U	106	76-124	4	15	
Dichlorodifluoromethane	18		1.0	ug/L	20.0	0.091 U	90	25-161	7	48	
Ethylbenzene	19		1.0	ug/L	20.0	0.10 U	94	68-124	1	16	
Freon 113	47		1.0	ug/L	40.0	0.35 U	118	0-200	2	25	
Hexachlorobutadiene	20		1.0	ug/L	20.0	0.15 U	98	63-114	3	19	
Isopropyl Ether	14		1.0	ug/L	20.0	0.21 U	72	70-130	6	30	
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	89	81-136	1	16	
m,p-Xylenes	35		2.0	ug/L	40.0	0.18 U	88	79-121	1	16	
Methylene Chloride	15		2.0	ug/L	20.0	0.070 U	73	68-128	1	17	
Methyl-tert-Butyl Ether	19		1.0	ug/L	20.0	0.12 U	96	10-127	2	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	75	50-127	4	19	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C30036 - EPA 5030B_MS - Continued

Matrix Spike Dup (5C30036-MSD1) Continued

Prepared: 03/30/2015 17:21 Analyzed: 03/31/2015 10:11

Source: C503934-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	18		1.0	ug/L	20.0	0.074 U	90	68-126	0.8	15	
n-Propyl Benzene	18		1.0	ug/L	20.0	0.073 U	89	76-125	1	16	
o-Xylene	21		1.0	ug/L	20.0	0.088 U	103	71-125	0.8	15	
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	105	75-122	0.6	17	
Styrene	20		1.0	ug/L	20.0	0.082 U	98	73-120	0.8	23	
tert-Butylbenzene	21		1.0	ug/L	20.0	0.094 U	106	70-137	0.5	22	
Tetrachloroethene	31		1.0	ug/L	20.0	0.099 U	157	40-181	13	26	
Toluene	19		1.0	ug/L	20.0	0.053 U	97	71-118	2	17	
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.11 U	92	75-139	5	19	
trans-1,3-Dichloropropene	17		1.0	ug/L	20.0	0.080 U	84	62-152	0.8	16	
Trichloroethene	24		1.0	ug/L	20.0	0.13 U	122	75-115	0.6	18	QM-07
Trichlorofluoromethane	27		1.0	ug/L	20.0	0.15 U	133	68-183	0.9	22	
Vinyl chloride	19		1.0	ug/L	20.0	0.083 U	95	49-150	18	27	
Xylenes (Total)	56		1.0	ug/L	60.0	0.22 U	93	77-121	0.6	16	
4-Bromofluorobenzene	48			ug/L	50.0		96	70-130			
Dibromofluoromethane	55			ug/L	50.0		110	70-130			
Toluene-d8	53			ug/L	50.0		106	70-130			

Batch 5C31033 - EPA 5030B_MS

Blank (5C31033-BLK1)

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 10:25

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

Blank (5C31033-BLK1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 10:25

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	52			ug/L	50.0		105	70-130			
Toluene-d8	54			ug/L	50.0		108	70-130			

LCS (5C31033-BS1)

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 10:56

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0		107	70-130			
1,1,1-Trichloroethane	21		1.0	ug/L	20.0		107	70-130			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0		86	70-130			
1,1,2-Trichloroethane	18		1.0	ug/L	20.0		89	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		93	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

LCS (5C31033-BS1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 10:56

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		99	70-130			
1,1-Dichloropropene	21		1.0	ug/L	20.0		103	70-130			
1,2,3-Trichlorobenzene	19		1.0	ug/L	20.0		95	70-130			
1,2,3-Trichloropropane	20		1.0	ug/L	20.0		99	70-130			
1,2,4-Trichlorobenzene	19		1.0	ug/L	20.0		95	70-130			
1,2,4-Trimethylbenzene	17		1.0	ug/L	20.0		85	70-130			
1,2-Dibromo-3-chloropropane	19		1.0	ug/L	20.0		96	70-130			
1,2-Dibromoethane	18		1.0	ug/L	20.0		88	70-130			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0		110	70-130			
1,2-Dichloroethane	23		1.0	ug/L	20.0		114	70-130			
1,2-Dichloropropane	20		1.0	ug/L	20.0		102	70-130			
1,3,5-Trimethylbenzene	16		1.0	ug/L	20.0		82	70-130			
1,3-Dichlorobenzene	22		1.0	ug/L	20.0		112	70-130			
1,3-Dichloropropane	18		1.0	ug/L	20.0		90	70-130			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0		95	70-130			
2,2-Dichloropropane	23		1.0	ug/L	20.0		115	70-130			
2-Chlorotoluene	20		1.0	ug/L	20.0		102	70-130			
4-Chlorotoluene	18		1.0	ug/L	20.0		90	70-130			
4-Isopropyltoluene	20		1.0	ug/L	20.0		102	70-130			
Benzene	18		1.0	ug/L	20.0		91	70-130			
Bromobenzene	22		1.0	ug/L	20.0		108	70-130			
Bromochloromethane	20		1.0	ug/L	20.0		100	70-130			
Bromodichloromethane	21		1.0	ug/L	20.0		105	70-130			
Bromoform	19		1.0	ug/L	20.0		93	70-130			
Bromomethane	21		1.0	ug/L	20.0		107	60-140			
Carbon Tetrachloride	24		1.0	ug/L	20.0		120	70-130			
Chlorobenzene	19		1.0	ug/L	20.0		97	70-130			
Chloroethane	20		1.0	ug/L	20.0		99	60-140			
Chloroform	19		1.0	ug/L	20.0		96	70-130			
Chloromethane	17		1.0	ug/L	20.0		86	60-140			
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0		86	70-130			
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0		97	70-130			
Dibromochloromethane	21		1.0	ug/L	20.0		104	70-130			
Dibromomethane	20		1.0	ug/L	20.0		99	70-130			
Dichlorodifluoromethane	15		1.0	ug/L	20.0		77	60-140			
Ethylbenzene	18		1.0	ug/L	20.0		89	70-130			
Freon 113	39		1.0	ug/L	40.0		97	70-130			
Hexachlorobutadiene	24		1.0	ug/L	20.0		118	70-130			
Isopropyl Ether	18		1.0	ug/L	20.0		92	70-130			
Isopropylbenzene	21		1.0	ug/L	20.0		106	70-130			
m,p-Xylenes	39		2.0	ug/L	40.0		96	70-130			
Methylene Chloride	18		2.0	ug/L	20.0		92	70-130			
Methyl-tert-Butyl Ether	18		1.0	ug/L	20.0		89	70-130			
Naphthalene	17		1.0	ug/L	20.0		83	70-130			
n-Butyl Benzene	19		1.0	ug/L	20.0		93	70-130			
n-Propyl Benzene	21		1.0	ug/L	20.0		105	70-130			
o-Xylene	21		1.0	ug/L	20.0		103	70-130			
sec-Butylbenzene	19		1.0	ug/L	20.0		97	70-130			
Styrene	19		1.0	ug/L	20.0		95	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

LCS (5C31033-BS1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 10:56

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tert-Butylbenzene	21		1.0	ug/L	20.0		103	70-130			
Tetrachloroethene	22		1.0	ug/L	20.0		111	70-130			
Toluene	17		1.0	ug/L	20.0		87	70-130			
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0		89	70-130			
trans-1,3-Dichloropropene	19		1.0	ug/L	20.0		95	70-130			
Trichloroethene	24		1.0	ug/L	20.0		118	70-130			
Trichlorofluoromethane	24		1.0	ug/L	20.0		119	60-140			
Vinyl chloride	21		1.0	ug/L	20.0		104	60-140			
Xylenes (Total)	59		1.0	ug/L	60.0		98	70-130			
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	54			ug/L	50.0		107	70-130			
Toluene-d8	55			ug/L	50.0		109	70-130			

Matrix Spike (5C31033-MS1)

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 11:25

Source: C502186-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0	0.091 U	106	71-117			
1,1,1-Trichloroethane	24		1.0	ug/L	20.0	0.15 U	121	72-143			
1,1,2,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.085 U	99	59-133			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	100	67-118			
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	97	79-141			
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.15 U	112	75-133			
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	106	70-129			
1,2,3-Trichlorobenzene	22		1.0	ug/L	20.0	0.25 U	109	62-117			
1,2,3-Trichloropropane	23		1.0	ug/L	20.0	0.15 U	116	58-140			
1,2,4-Trichlorobenzene	23		1.0	ug/L	20.0	0.097 U	114	59-122			
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	92	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	85	37-157			
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	97	66-123			
1,2-Dichlorobenzene	23		1.0	ug/L	20.0	0.052 U	115	76-116			
1,2-Dichloroethane	25		1.0	ug/L	20.0	0.082 U	126	72-151			
1,2-Dichloropropane	21		1.0	ug/L	20.0	0.098 U	103	78-125			
1,3,5-Trimethylbenzene	17		1.0	ug/L	20.0	0.10 U	86	77-129			
1,3-Dichlorobenzene	22		1.0	ug/L	20.0	0.092 U	112	76-119			
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	97	60-129			
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	99	76-122			
2,2-Dichloropropane	24		1.0	ug/L	20.0	0.12 U	118	21-167			
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	105	73-135			
4-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	96	76-134			
4-Isopropyltoluene	23		1.0	ug/L	20.0	0.066 U	113	75-127			
Benzene	20		1.0	ug/L	20.0	0.050 U	102	81-134			
Bromobenzene	24		1.0	ug/L	20.0	0.13 U	118	72-115			QM-07
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	103	74-128			
Bromodichloromethane	22		1.0	ug/L	20.0	0.10 U	111	72-129			
Bromoform	21		1.0	ug/L	20.0	0.20 U	106	73-119			
Bromomethane	26		1.0	ug/L	20.0	0.28 U	132	38-189			
Carbon Tetrachloride	28		1.0	ug/L	20.0	0.082 U	139	68-142			
Chlorobenzene	22		1.0	ug/L	20.0	0.069 U	109	83-117			
Chloroethane	23		1.0	ug/L	20.0	0.18 U	116	45-213			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

Matrix Spike (5C31033-MS1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 11:25

Source: C502186-04

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroform	20		1.0	ug/L	20.0	0.083 U	102	78-138			
Chloromethane	20		1.0	ug/L	20.0	0.050 U	101	56-171			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.63	89	69-120			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.073 U	103	63-125			
Dibromochloromethane	22		1.0	ug/L	20.0	0.067 U	110	73-117			
Dibromomethane	22		1.0	ug/L	20.0	0.13 U	108	76-124			
Dichlorodifluoromethane	22		1.0	ug/L	20.0	0.091 U	112	25-161			
Ethylbenzene	20		1.0	ug/L	20.0	0.10 U	99	68-124			
Freon 113	44		1.0	ug/L	40.0	0.35 U	111	0-200			
Hexachlorobutadiene	26		1.0	ug/L	20.0	0.15 U	132	63-114			QM-07
Isopropyl Ether	19		1.0	ug/L	20.0	0.21 U	96	70-130			
Isopropylbenzene	25		1.0	ug/L	20.0	0.13 U	123	81-136			
m,p-Xylenes	42		2.0	ug/L	40.0	0.18 U	104	79-121			
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	95	68-128			
Methyl-tert-Butyl Ether	19		1.0	ug/L	20.0	0.12 U	93	10-127			
Naphthalene	19		1.0	ug/L	20.0	0.086 U	93	50-127			
n-Butyl Benzene	20		1.0	ug/L	20.0	0.074 U	102	68-126			
n-Propyl Benzene	24		1.0	ug/L	20.0	0.073 U	121	76-125			
o-Xylene	23		1.0	ug/L	20.0	0.088 U	117	71-125			
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	106	75-122			
Styrene	21		1.0	ug/L	20.0	0.082 U	105	73-120			
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	109	70-137			
Tetrachloroethene	27		1.0	ug/L	20.0	0.099 U	134	40-181			
Toluene	20		1.0	ug/L	20.0	0.053 U	98	71-118			
trans-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.11 U	100	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	105	62-152			
Trichloroethene	25		1.0	ug/L	20.0	0.13 U	124	75-115			QM-07
Trichlorofluoromethane	27		1.0	ug/L	20.0	0.15 U	137	68-183			
Vinyl chloride	24		1.0	ug/L	20.0	0.083 U	120	49-150			
Xylenes (Total)	65		1.0	ug/L	60.0	0.22 U	108	77-121			
4-Bromofluorobenzene	58			ug/L	50.0		116	70-130			
Dibromofluoromethane	50			ug/L	50.0		100	70-130			
Toluene-d8	56			ug/L	50.0		112	70-130			

Matrix Spike Dup (5C31033-MSD1)

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 11:54

Source: C502186-04

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	22		1.0	ug/L	20.0	0.091 U	109	71-117	3	16	
1,1,1-Trichloroethane	22		1.0	ug/L	20.0	0.15 U	110	72-143	9	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	94	59-133	6	16	
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	97	67-118	4	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	94	79-141	4	19	
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.15 U	108	75-133	4	20	
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	104	70-129	2	17	
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0	0.25 U	102	62-117	7	17	
1,2,3-Trichloropropane	21		1.0	ug/L	20.0	0.15 U	103	58-140	12	17	
1,2,4-Trichlorobenzene	22		1.0	ug/L	20.0	0.097 U	109	59-122	4	17	
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	90	74-123	2	18	
1,2-Dibromo-3-chloropropane	20		1.0	ug/L	20.0	0.48 U	102	37-157	18	18	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

Matrix Spike Dup (5C31033-MSD1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 11:54

Source: C502186-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	98	66-123	1	15	
1,2-Dichlorobenzene	21		1.0	ug/L	20.0	0.052 U	107	76-116	6	16	
1,2-Dichloroethane	24		1.0	ug/L	20.0	0.082 U	118	72-151	7	16	
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	102	78-125	2	19	
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	88	77-129	3	16	
1,3-Dichlorobenzene	23		1.0	ug/L	20.0	0.092 U	113	76-119	1	17	
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	93	60-129	4	16	
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	96	76-122	3	16	
2,2-Dichloropropane	24		1.0	ug/L	20.0	0.12 U	119	21-167	1	20	
2-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	92	73-135	13	16	
4-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	92	76-134	4	16	
4-Isopropyltoluene	22		1.0	ug/L	20.0	0.066 U	109	75-127	3	17	
Benzene	20		1.0	ug/L	20.0	0.050 U	98	81-134	4	17	
Bromobenzene	22		1.0	ug/L	20.0	0.13 U	111	72-115	7	17	
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	105	74-128	2	18	
Bromodichloromethane	22		1.0	ug/L	20.0	0.10 U	108	72-129	3	16	
Bromoform	21		1.0	ug/L	20.0	0.20 U	107	73-119	0.8	44	
Bromomethane	25		1.0	ug/L	20.0	0.28 U	125	38-189	5	27	
Carbon Tetrachloride	26		1.0	ug/L	20.0	0.082 U	129	68-142	7	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	103	83-117	6	16	
Chloroethane	22		1.0	ug/L	20.0	0.18 U	111	45-213	4	26	
Chloroform	19		1.0	ug/L	20.0	0.083 U	95	78-138	7	17	
Chloromethane	19		1.0	ug/L	20.0	0.050 U	94	56-171	6	28	
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.63	88	69-120	1	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	98	63-125	4	17	
Dibromochloromethane	23		1.0	ug/L	20.0	0.067 U	115	73-117	4	16	
Dibromomethane	20		1.0	ug/L	20.0	0.13 U	99	76-124	8	15	
Dichlorodifluoromethane	21		1.0	ug/L	20.0	0.091 U	104	25-161	8	48	
Ethylbenzene	19		1.0	ug/L	20.0	0.10 U	97	68-124	2	16	
Freon 113	44		1.0	ug/L	40.0	0.35 U	110	0-200	1	25	
Hexachlorobutadiene	23		1.0	ug/L	20.0	0.15 U	115	63-114	14	19	QM-07
Isopropyl Ether	18		1.0	ug/L	20.0	0.21 U	92	70-130	4	30	
Isopropylbenzene	24		1.0	ug/L	20.0	0.13 U	119	81-136	3	16	
m,p-Xylenes	42		2.0	ug/L	40.0	0.18 U	106	79-121	2	16	
Methylene Chloride	18		2.0	ug/L	20.0	0.070 U	88	68-128	7	17	
Methyl-tert-Butyl Ether	18		1.0	ug/L	20.0	0.12 U	88	10-127	5	21	
Naphthalene	19		1.0	ug/L	20.0	0.086 U	94	50-127	0.8	19	
n-Butyl Benzene	20		1.0	ug/L	20.0	0.074 U	98	68-126	4	15	
n-Propyl Benzene	23		1.0	ug/L	20.0	0.073 U	117	76-125	3	16	
o-Xylene	22		1.0	ug/L	20.0	0.088 U	112	71-125	5	15	
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	107	75-122	1	17	
Styrene	20		1.0	ug/L	20.0	0.082 U	98	73-120	7	23	
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	109	70-137	0.3	22	
Tetrachloroethene	24		1.0	ug/L	20.0	0.099 U	120	40-181	11	26	
Toluene	20		1.0	ug/L	20.0	0.053 U	98	71-118	0.3	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	95	75-139	5	19	
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.080 U	101	62-152	4	16	
Trichloroethene	23		1.0	ug/L	20.0	0.13 U	117	75-115	7	18	QM-07
Trichlorofluoromethane	25		1.0	ug/L	20.0	0.15 U	125	68-183	9	22	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5C31033 - EPA 5030B_MS - Continued

Matrix Spike Dup (5C31033-MSD1) Continued

Prepared: 03/31/2015 15:21 Analyzed: 04/01/2015 11:54

Source: C502186-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	23		1.0	ug/L	20.0	0.083 U	116	49-150	4	27	
Xylenes (Total)	65		1.0	ug/L	60.0	0.22 U	108	77-121	0.4	16	
4-Bromofluorobenzene	58			ug/L	50.0		115	70-130			
Dibromofluoromethane	53			ug/L	50.0		105	70-130			
Toluene-d8	55			ug/L	50.0		110	70-130			

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5C26010 - EPA 5030B

Blank (5C26010-BLK1)

Prepared: 03/26/2015 10:05 Analyzed: 03/26/2015 14:31

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	4.7	U	30.0	ug/L							
C9-C10 Aromatics	4.2	U	10	ug/L							
C9-C12 Aliphatics	10.0	U	30.0	ug/L							
2,5-Dibromotoluene (FID)	98.9			ug/L	100		99	70-130			
2,5-Dibromotoluene (PID)	99			ug/L	100		99	70-130			

LCS (5C26010-BS1)

Prepared: 03/26/2015 10:05 Analyzed: 03/26/2015 15:03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	124		30.0	ug/L	120		103	70-130			
C9-C10 Aromatics	40		10	ug/L	40.0		99	70-130			
C9-C12 Aliphatics	122		30.0	ug/L	120		102	70-130			
2,5-Dibromotoluene (FID)	102			ug/L	100		102	70-130			
2,5-Dibromotoluene (PID)	96			ug/L	100		96	70-130			

LCS Dup (5C26010-BSD1)

Prepared: 03/26/2015 10:05 Analyzed: 03/26/2015 15:34

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	129		30.0	ug/L	120		108	70-130	4	25	
C9-C10 Aromatics	39		10	ug/L	40.0		97	70-130	2	25	
C9-C12 Aliphatics	125		30.0	ug/L	120		105	70-130	3	25	
2,5-Dibromotoluene (FID)	104			ug/L	100		104	70-130			
2,5-Dibromotoluene (PID)	96			ug/L	100		96	70-130			

Batch 5C27012 - EPA 5030B

Blank (5C27012-BLK1)

Prepared: 03/27/2015 11:02 Analyzed: 03/27/2015 15:39

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	4.7	U	30.0	ug/L							
C9-C10 Aromatics	4.2	U	10	ug/L							
C9-C12 Aliphatics	10.0	U	30.0	ug/L							
2,5-Dibromotoluene (FID)	95.3			ug/L	100		95	70-130			
2,5-Dibromotoluene (PID)	99			ug/L	100		99	70-130			

QUALITY CONTROL DATA

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5C27012 - EPA 5030B - Continued

LCS (5C27012-BS1)

Prepared: 03/27/2015 11:02 Analyzed: 03/27/2015 16:10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	121		30.0	ug/L	120		101	70-130			
C9-C10 Aromatics	39		10	ug/L	40.0		97	70-130			
C9-C12 Aliphatics	119		30.0	ug/L	120		99	70-130			
2,5-Dibromotoluene (FID)	102			ug/L	100		102	70-130			
2,5-Dibromotoluene (PID)	96			ug/L	100		96	70-130			

LCS Dup (5C27012-BSD1)

Prepared: 03/27/2015 11:02 Analyzed: 03/27/2015 16:41

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	128		30.0	ug/L	120		107	70-130	5	25	
C9-C10 Aromatics	40		10	ug/L	40.0		99	70-130	2	25	
C9-C12 Aliphatics	121		30.0	ug/L	120		101	70-130	2	25	
2,5-Dibromotoluene (FID)	99.0			ug/L	100		99	70-130			
2,5-Dibromotoluene (PID)	95			ug/L	100		95	70-130			

Semivolatile Organic Compounds by GC - Quality Control

Batch 5C19035 - Same SVOA

Blank (5C19035-BLK1)

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 08:17

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.031	U	0.10	ug/L							
1,2-Dibromo-3-chloropropane	0.0050	U	0.020	ug/L							
1,2-Dibromoethane	0.0053	U	0.020	ug/L							
1,1,1,2-Tetrachloroethane	0.26			ug/L	0.250		104	70-130			

LCS (5C19035-BS1)

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 08:33

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.22		0.10	ug/L	0.200		111	70-130			
1,2-Dibromo-3-chloropropane	0.22		0.020	ug/L	0.200		112	70-130			
1,2-Dibromoethane	0.21		0.020	ug/L	0.200		105	70-130			
1,1,1,2-Tetrachloroethane	0.23			ug/L	0.250		91	70-130			

LCS Dup (5C19035-BSD1)

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 08:50

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.26		0.10	ug/L	0.200		129	70-130	15	18	
1,2-Dibromo-3-chloropropane	0.26		0.020	ug/L	0.200		129	70-130	15	20	
1,2-Dibromoethane	0.24		0.020	ug/L	0.200		118	70-130	12	18	
1,1,1,2-Tetrachloroethane	0.27			ug/L	0.250		107	70-130			

Matrix Spike (5C19035-MS1)

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 09:07

Source: C503600-03

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.24		0.10	ug/L	0.200	0.031 U	119	65-135			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GC - Quality Control

Batch 5C19035 - Same SVOA - Continued

Matrix Spike (5C19035-MS1) Continued

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 09:07

Source: C503600-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromo-3-chloropropane	0.24		0.020	ug/L	0.200	0.0050 U	120	65-135			
1,2-Dibromoethane	0.22		0.020	ug/L	0.200	0.0053 U	111	65-135			
1,1,1,2-Tetrachloroethane	0.25			ug/L	0.250		100	70-130			

Matrix Spike Dup (5C19035-MSD1)

Prepared: 03/19/2015 16:00 Analyzed: 03/20/2015 09:33

Source: C503600-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.23		0.10	ug/L	0.200	0.031 U	114	65-135	5	18	
1,2-Dibromo-3-chloropropane	0.24		0.020	ug/L	0.200	0.0050 U	120	65-135	0.7	20	
1,2-Dibromoethane	0.22		0.020	ug/L	0.200	0.0053 U	109	65-135	1	18	
1,1,1,2-Tetrachloroethane	0.24			ug/L	0.250		98	70-130			

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5C25020 - EPA 3005A

Blank (5C25020-BLK1)

Prepared: 03/25/2015 10:20 Analyzed: 03/29/2015 13:14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	3.10	U	10.0	ug/L							

LCS (5C25020-BS1)

Prepared: 03/25/2015 10:20 Analyzed: 03/29/2015 13:21

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	214		10.0	ug/L	200		107	80-120			

Matrix Spike (5C25020-MS1)

Prepared: 03/25/2015 10:20 Analyzed: 03/29/2015 13:33

Source: C502191-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	224		10.0	ug/L	200	3.10 U	112	75-125			

Matrix Spike Dup (5C25020-MSD1)

Prepared: 03/25/2015 10:20 Analyzed: 03/29/2015 13:36

Source: C502191-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	225		10.0	ug/L	200	3.10 U	113	75-125	0.8	20	

Post Spike (5C25020-PS1)

Prepared: 03/25/2015 10:20 Analyzed: 03/29/2015 13:38

Source: C502191-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.203		0.0100	mg/L	0.200	0.000104	102	80-120			

FLAGS/NOTES AND DEFINITIONS

- B** The analyte was detected in the associated method blank.
- D** The sample was analyzed at dilution.
- J** The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
- U** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- E** The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
- MRL** Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
- ND** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- N** The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
- P** Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
- QL-02** The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal.
- QM-07** The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.



10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-8210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

Page 1 of 1

Client Name
East Coast Environmental, P.A.

Address
3815 Junction Boulevard

City/ST/Zip
Raleigh, North Carolina 27603

Tel _____ Fax _____

Sampler(s) Name, Affiliation (Print)
Thomas Gill

Sampler(s) Signature
Thomas Gill

Project Number

Project Name/Desc
COLEY Bcg

PO # / Billing Info

Reporting Contact

Billing Contact

Site Location / Time Zone

Requested Analyses

6200b
MADEP-UPH
total lead
Edg by 504.1
(if possible)

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

Standard

Expedited

Due _____

Lab Workorder

C503454

Sample Comments

For info

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Preservation (See Codes) (Combine as necessary)	Sample Comments
	MW-1	3/18	2:45		water		X	
	MW-2	3/18	3:00		---		X	
	MW-3	3/18	3:15		---		X	
	MW-4	3/18	3:30		---		X	
	MW-5	3/18	3:45		---		X	

Sample Kit Prepared By

Date/Time

Relinquished By

Date/Time

Received By

Date/Time

Comments/Special Reporting Requirements

Relinquished By

Date/Time

Received By

Date/Time

Cooler #'s & Temps on Receipt

141

Condition Upon Receipt

Acceptable

Unacceptable

Matrix: GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515

Wednesday, June 3, 2015

East Coast Environmental (EA030)

Attn: Tom Will

3815 Junction Blvd.

Raleigh, NC 27603

RE: Laboratory Results for

Project Number: [none], Project Name/Desc: Grocery Bag

ENCO Workorder(s): C506294

Dear Tom Will,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, May 20, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Bill Scott

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-6		Lab ID: C506294-01		Sampled: 05/17/15 14:00		Received: 05/20/15 11:40	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	05/31/15	05/21/15 12:30		05/21/15 18:43			
EPA 6010C	11/13/15	05/27/15 16:19		06/02/15 16:25			
MAVPH	05/31/15	05/26/15 10:38		05/26/15 17:54			
SM 6200B-1997	05/31/15	05/26/15 16:13		05/27/15 10:53			

Client ID: MW-7		Lab ID: C506294-02		Sampled: 05/17/15 14:30		Received: 05/20/15 11:40	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	05/31/15	05/21/15 12:30		05/21/15 19:01			
EPA 6010C	11/13/15	05/27/15 16:19		06/02/15 16:28			

Client ID: MW-7		Lab ID: C506294-02RE1		Sampled: 05/17/15 14:30		Received: 05/20/15 11:40	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
MAVPH	05/31/15	05/26/15 10:38		05/27/15 12:45			
SM 6200B-1997	05/31/15	05/29/15 10:16		05/29/15 14:05			

SAMPLE DETECTION SUMMARY

Client ID: MW-6			Lab ID: C506294-01				
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Lead - Total	129		3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-7			Lab ID: C506294-02				
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Lead - Total	174		3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-7			Lab ID: C506294-02RE1				
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	4500	D	3.4	50	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	1300	D	5.0	50	ug/L	SM 6200B-1997	
4-Isopropyltoluene	50	D	3.3	50	ug/L	SM 6200B-1997	
Benzene	680	D	2.5	50	ug/L	SM 6200B-1997	
C5-C8 Aliphatics	4490	D	235	1500	ug/L	MAVPH	
C9-C10 Aromatics	14000	D	210	500	ug/L	MAVPH	
C9-C12 Aliphatics	18900	D	500	1500	ug/L	MAVPH	
Ethylbenzene	1700	D	5.0	50	ug/L	SM 6200B-1997	
Isopropylbenzene	140	D	6.5	50	ug/L	SM 6200B-1997	
m,p-Xylenes	9200	D	9.0	100	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	84	D	6.0	50	ug/L	SM 6200B-1997	
Naphthalene	830	D	4.3	50	ug/L	SM 6200B-1997	
n-Propyl Benzene	440	D	3.6	50	ug/L	SM 6200B-1997	
o-Xylene	2900	D	4.4	50	ug/L	SM 6200B-1997	
Toluene	1400	D	2.6	50	ug/L	SM 6200B-1997	
Xylenes (Total)	12000	D	11	50	ug/L	SM 6200B-1997	

ANALYTICAL RESULTS

Description: MW-6

Lab Sample ID: C506294-01

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:00

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/L	1	0.067	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Benzene [71-43-2]^	ND		ug/L	1	0.050	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Ethylbenzene [100-41-4]^	ND		ug/L	1	0.10	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Isopropyl Ether [108-20-3]^	ND		ug/L	1	0.21	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Isopropylbenzene [98-82-8]^	ND		ug/L	1	0.13	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	ND		ug/L	1	0.18	2.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	

ANALYTICAL RESULTS

Description: MW-6

Lab Sample ID: C506294-01

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:00

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/L	1	0.12	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Naphthalene [91-20-3]^	ND		ug/L	1	0.086	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
n-Propyl Benzene [103-65-1]^	ND		ug/L	1	0.073	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
o-Xylene [95-47-6]^	ND		ug/L	1	0.088	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	1	0.053	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Toluene [108-88-3]^	ND		ug/L	1	0.053	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Xylenes (Total) [1330-20-7]^	ND		ug/L	1	0.22	1.0	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	48	1	50.0	96 %	70-130	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Dibromofluoromethane	54	1	50.0	107 %	70-130	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	
Toluene-d8	53	1	50.0	106 %	70-130	5E26031	SM 6200B-1997	05/27/15 10:53	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	ND		ug/L	1	4.7	30.0	5E26019	MAVPH	05/26/15 17:54	REF	
C9-C10 Aromatics^	ND		ug/L	1	4.2	10	5E26019	MAVPH	05/26/15 17:54	REF	
C9-C12 Aliphatics^	ND		ug/L	1	10.0	30.0	5E26019	MAVPH	05/26/15 17:54	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	95.3	1	100	95 %	70-130	5E26019	MAVPH	05/26/15 17:54	REF	
2,5-Dibromotoluene (PID)	96	1	100	96 %	70-130	5E26019	MAVPH	05/26/15 17:54	REF	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5E21018	EPA 504.1	05/21/15 18:43	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5E21018	EPA 504.1	05/21/15 18:43	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5E21018	EPA 504.1	05/21/15 18:43	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.21	1	0.250	86 %	70-130	5E21018	EPA 504.1	05/21/15 18:43	BIG	



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ANALYTICAL RESULTS

Description: MW-6

Lab Sample ID: C506294-01

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:00

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	129		ug/L	1	3.10	10.0	5E27042	EPA 6010C	06/02/15 16:25	JDH	

ANALYTICAL RESULTS

Description: MW-7

Lab Sample ID: C506294-02

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:30

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	50	4.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	50	4.2	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	50	3.4	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	50	2.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	50	3.2	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	50	12	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	50	4.8	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	4500	D	ug/L	50	3.4	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	50	24	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	50	21	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	50	2.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	50	4.1	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	50	4.9	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	1300	D	ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	50	4.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	50	6.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
4-Isopropyltoluene [99-87-6]^	50	D	ug/L	50	3.3	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Benzene [71-43-2]^	680	D	ug/L	50	2.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	50	6.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	50	5.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Bromoform [75-25-2]^	ND		ug/L	50	10	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	50	14	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	50	4.1	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	50	3.4	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	50	9.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Chloroform [67-66-3]^	ND		ug/L	50	4.2	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	50	2.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	50	3.8	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	50	3.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	50	3.4	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	50	6.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	50	4.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Ethylbenzene [100-41-4]^	1700	D	ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	50	18	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Isopropyl Ether [108-20-3]^	ND		ug/L	50	10	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Isopropylbenzene [98-82-8]^	140	D	ug/L	50	6.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	9200	D	ug/L	50	9.0	100	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	50	3.5	100	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	

ANALYTICAL RESULTS

Description: MW-7

Lab Sample ID: C506294-02

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:30

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	84	D	ug/L	50	6.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Naphthalene [91-20-3]^	830	D	ug/L	50	4.3	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	50	3.7	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
n-Propyl Benzene [103-65-1]^	440	D	ug/L	50	3.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
o-Xylene [95-47-6]^	2900	D	ug/L	50	4.4	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	50	2.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Styrene [100-42-5]^	ND		ug/L	50	4.1	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	50	4.7	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	50	5.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Toluene [108-88-3]^	1400	D	ug/L	50	2.6	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	50	5.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	50	4.0	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	50	6.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	50	7.5	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	50	4.2	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Xylenes (Total) [1330-20-7]^	12000	D	ug/L	50	11	50	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	49	1	50.0	97 %	70-130	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Dibromofluoromethane	49	1	50.0	98 %	70-130	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	
Toluene-d8	54	1	50.0	108 %	70-130	5E29016	SM 6200B-1997	05/29/15 14:05	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	4490	D	ug/L	50	235	1500	5E26019	MAVPH	05/27/15 12:45	REF	
C9-C10 Aromatics^	14000	D	ug/L	50	210	500	5E26019	MAVPH	05/27/15 12:45	REF	
C9-C12 Aliphatics^	18900	D	ug/L	50	500	1500	5E26019	MAVPH	05/27/15 12:45	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	119	1	100	119 %	70-130	5E26019	MAVPH	05/27/15 12:45	REF	
2,5-Dibromotoluene (PID)	98	1	100	98 %	70-130	5E26019	MAVPH	05/27/15 12:45	REF	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5E21018	EPA 504.1	05/21/15 19:01	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5E21018	EPA 504.1	05/21/15 19:01	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5E21018	EPA 504.1	05/21/15 19:01	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.20	1	0.250	80 %	70-130	5E21018	EPA 504.1	05/21/15 19:01	BIG	



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ANALYTICAL RESULTS

Description: MW-7

Lab Sample ID: C506294-02

Received: 05/20/15 11:40

Matrix: Water

Sampled: 05/17/15 14:30

Work Order: C506294

Project: Grocery Bag

Sampled By: Client

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	174		ug/L	1	3.10	10.0	5E27042	EPA 6010C	06/02/15 16:28	JDH	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS

Blank (5E26031-BLK1)

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 00:30

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS - Continued

Blank (5E26031-BLK1) Continued

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 00:30

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	48			ug/L	50.0		96	70-130			
Dibromofluoromethane	51			ug/L	50.0		103	70-130			
Toluene-d8	52			ug/L	50.0		103	70-130			

LCS (5E26031-BS1)

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 01:00

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1,1-Trichloroethane	20		1.0	ug/L	20.0		102	70-130			
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0		94	70-130			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0		101	70-130			
1,1-Dichloroethane	20		1.0	ug/L	20.0		102	70-130			
1,1-Dichloroethene	18		1.0	ug/L	20.0		92	70-130			
1,1-Dichloropropene	21		1.0	ug/L	20.0		105	70-130			
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0		81	70-130			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0		91	70-130			
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0		82	70-130			
1,2,4-Trimethylbenzene	22		1.0	ug/L	20.0		109	70-130			
1,2-Dibromo-3-chloropropane	15		1.0	ug/L	20.0		77	70-130			
1,2-Dibromoethane	20		1.0	ug/L	20.0		99	70-130			
1,2-Dichlorobenzene	21		1.0	ug/L	20.0		103	70-130			
1,2-Dichloroethane	21		1.0	ug/L	20.0		105	70-130			
1,2-Dichloropropane	20		1.0	ug/L	20.0		101	70-130			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0		106	70-130			
1,3-Dichlorobenzene	21		1.0	ug/L	20.0		105	70-130			
1,3-Dichloropropane	19		1.0	ug/L	20.0		97	70-130			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0		95	70-130			
2,2-Dichloropropane	21		1.0	ug/L	20.0		107	70-130			
2-Chlorotoluene	22		1.0	ug/L	20.0		109	70-130			
4-Chlorotoluene	23		1.0	ug/L	20.0		114	70-130			
4-Isopropyltoluene	20		1.0	ug/L	20.0		99	70-130			
Benzene	20		1.0	ug/L	20.0		100	70-130			
Bromobenzene	19		1.0	ug/L	20.0		97	70-130			
Bromochloromethane	20		1.0	ug/L	20.0		102	70-130			
Bromodichloromethane	21		1.0	ug/L	20.0		107	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS - Continued

LCS (5E26031-BS1) Continued

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 01:00

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromoform	18		1.0	ug/L	20.0		88	70-130			
Bromomethane	17		1.0	ug/L	20.0		85	60-140			
Carbon Tetrachloride	21		1.0	ug/L	20.0		104	70-130			
Chlorobenzene	21		1.0	ug/L	20.0		105	70-130			
Chloroethane	21		1.0	ug/L	20.0		106	60-140			
Chloroform	20		1.0	ug/L	20.0		101	70-130			
Chloromethane	17		1.0	ug/L	20.0		87	60-140			
cis-1,2-Dichloroethene	21		1.0	ug/L	20.0		103	70-130			
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0		102	70-130			
Dibromochloromethane	21		1.0	ug/L	20.0		103	70-130			
Dibromomethane	20		1.0	ug/L	20.0		98	70-130			
Dichlorodifluoromethane	19		1.0	ug/L	20.0		97	60-140			
Ethylbenzene	18		1.0	ug/L	20.0		92	70-130			
Freon 113	40		1.0	ug/L	40.0		101	70-130			
Hexachlorobutadiene	18		1.0	ug/L	20.0		90	70-130			
Isopropyl Ether	22		1.0	ug/L	20.0		112	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0		116	70-130			
m,p-Xylenes	40		2.0	ug/L	40.0		100	70-130			
Methylene Chloride	20		2.0	ug/L	20.0		101	70-130			
Methyl-tert-Butyl Ether	22		1.0	ug/L	20.0		110	70-130			
Naphthalene	14		1.0	ug/L	20.0		72	70-130			
n-Butyl Benzene	21		1.0	ug/L	20.0		107	70-130			
n-Propyl Benzene	21		1.0	ug/L	20.0		104	70-130			
o-Xylene	23		1.0	ug/L	20.0		114	70-130			
sec-Butylbenzene	20		1.0	ug/L	20.0		101	70-130			
Styrene	22		1.0	ug/L	20.0		108	70-130			
tert-Butylbenzene	23		1.0	ug/L	20.0		113	70-130			
Tetrachloroethene	20		1.0	ug/L	20.0		99	70-130			
Toluene	21		1.0	ug/L	20.0		103	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		94	70-130			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0		105	70-130			
Trichloroethene	20		1.0	ug/L	20.0		99	70-130			
Trichlorofluoromethane	20		1.0	ug/L	20.0		102	60-140			
Vinyl chloride	19		1.0	ug/L	20.0		96	60-140			
Xylenes (Total)	63		1.0	ug/L	60.0		104	70-130			
4-Bromofluorobenzene	50			ug/L	50.0		101	70-130			
Dibromofluoromethane	50			ug/L	50.0		101	70-130			
Toluene-d8	53			ug/L	50.0		107	70-130			

Matrix Spike (5E26031-MS1)

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 01:30

Source: C506502-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	101	71-117			
1,1,1-Trichloroethane	21		1.0	ug/L	20.0	0.15 U	103	72-143			
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	99	67-118			
1,1-Dichloroethane	21		1.0	ug/L	20.0	0.050 U	103	79-141			
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.15 U	94	75-133			
1,1-Dichloropropene	22		1.0	ug/L	20.0	0.063 U	109	70-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS - Continued

Matrix Spike (5E26031-MS1) Continued

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 01:30

Source: C506502-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	82	62-117			
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	95	58-140			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	84	59-122			
1,2,4-Trimethylbenzene	22		1.0	ug/L	20.0	0.067 U	109	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	85	37-157			
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	102	66-123			
1,2-Dichlorobenzene	21		1.0	ug/L	20.0	0.052 U	105	76-116			
1,2-Dichloroethane	21		1.0	ug/L	20.0	0.082 U	107	72-151			
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	102	78-125			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0	0.10 U	106	77-129			
1,3-Dichlorobenzene	21		1.0	ug/L	20.0	0.092 U	106	76-119			
1,3-Dichloropropane	20		1.0	ug/L	20.0	0.15 U	98	60-129			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	97	76-122			
2,2-Dichloropropane	21		1.0	ug/L	20.0	0.12 U	105	21-167			
2-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	108	73-135			
4-Chlorotoluene	23		1.0	ug/L	20.0	0.10 U	114	76-134			
4-Isopropyltoluene	20		1.0	ug/L	20.0	0.066 U	100	75-127			
Benzene	20		1.0	ug/L	20.0	0.050 U	101	81-134			
Bromobenzene	20		1.0	ug/L	20.0	0.13 U	99	72-115			
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	105	74-128			
Bromodichloromethane	22		1.0	ug/L	20.0	0.10 U	108	72-129			
Bromoform	18		1.0	ug/L	20.0	0.20 U	88	73-119			
Bromomethane	18		1.0	ug/L	20.0	0.28 U	89	38-189			
Carbon Tetrachloride	22		1.0	ug/L	20.0	0.082 U	109	68-142			
Chlorobenzene	22		1.0	ug/L	20.0	0.069 U	108	83-117			
Chloroethane	21		1.0	ug/L	20.0	0.18 U	106	45-213			
Chloroform	20		1.0	ug/L	20.0	0.083 U	102	78-138			
Chloromethane	18		1.0	ug/L	20.0	0.050 U	91	56-171			
cis-1,2-Dichloroethene	21		1.0	ug/L	20.0	0.075 U	103	69-120			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.073 U	104	63-125			
Dibromochloromethane	21		1.0	ug/L	20.0	0.067 U	104	73-117			
Dibromomethane	20		1.0	ug/L	20.0	0.13 U	99	76-124			
Dichlorodifluoromethane	19		1.0	ug/L	20.0	0.091 U	94	25-161			
Ethylbenzene	19		1.0	ug/L	20.0	0.10 U	94	68-124			
Freon 113	40		1.0	ug/L	40.0	0.35 U	101	0-200			
Hexachlorobutadiene	19		1.0	ug/L	20.0	0.15 U	94	63-114			
Isopropyl Ether	23		1.0	ug/L	20.0	0.21 U	114	70-130			
Isopropylbenzene	24		1.0	ug/L	20.0	0.13 U	120	81-136			
m,p-Xylenes	41		2.0	ug/L	40.0	0.18 U	102	79-121			
Methylene Chloride	20		2.0	ug/L	20.0	0.070 U	100	68-128			
Methyl-tert-Butyl Ether	22		1.0	ug/L	20.0	0.12 U	111	10-127			
Naphthalene	15		1.0	ug/L	20.0	0.086 U	76	50-127			
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	107	68-126			
n-Propyl Benzene	21		1.0	ug/L	20.0	0.073 U	104	76-125			
o-Xylene	23		1.0	ug/L	20.0	0.088 U	116	71-125			
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	103	75-122			
Styrene	22		1.0	ug/L	20.0	0.082 U	108	73-120			
tert-Butylbenzene	23		1.0	ug/L	20.0	0.094 U	114	70-137			
Tetrachloroethene	25		1.0	ug/L	20.0	0.099 U	123	40-181			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS - Continued

Matrix Spike (5E26031-MS1) Continued

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 01:30

Source: C506502-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene	21		1.0	ug/L	20.0	0.053 U	106	71-118			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	95	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	106	62-152			
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	102	75-115			
Trichlorofluoromethane	20		1.0	ug/L	20.0	0.15 U	98	68-183			
Vinyl chloride	20		1.0	ug/L	20.0	0.083 U	98	49-150			
Xylenes (Total)	64		1.0	ug/L	60.0	0.22 U	107	77-121			
4-Bromofluorobenzene	50			ug/L	50.0		101	70-130			
Dibromofluoromethane	49			ug/L	50.0		99	70-130			
Toluene-d8	53			ug/L	50.0		107	70-130			

Matrix Spike Dup (5E26031-MSD1)

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 02:00

Source: C506502-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	99	71-117	2	16	
1,1,1-Trichloroethane	20		1.0	ug/L	20.0	0.15 U	99	72-143	4	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133	0.7	16	
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	97	67-118	2	18	
1,1-Dichloroethane	20		1.0	ug/L	20.0	0.050 U	99	79-141	4	19	
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	91	75-133	4	20	
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	103	70-129	5	17	
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	81	62-117	2	17	
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	97	58-140	2	17	
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0	0.097 U	81	59-122	3	17	
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0	0.067 U	106	74-123	3	18	
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	85	37-157	0.9	18	
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	99	66-123	3	15	
1,2-Dichlorobenzene	20		1.0	ug/L	20.0	0.052 U	102	76-116	2	16	
1,2-Dichloroethane	20		1.0	ug/L	20.0	0.082 U	99	72-151	7	16	
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	101	78-125	1	19	
1,3,5-Trimethylbenzene	20		1.0	ug/L	20.0	0.10 U	102	77-129	4	16	
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	102	76-119	4	17	
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	97	60-129	0.5	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	92	76-122	5	16	
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	102	21-167	3	20	
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	105	73-135	3	16	
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	109	76-134	4	16	
4-Isopropyltoluene	19		1.0	ug/L	20.0	0.066 U	96	75-127	4	17	
Benzene	19		1.0	ug/L	20.0	0.050 U	96	81-134	5	17	
Bromobenzene	20		1.0	ug/L	20.0	0.13 U	98	72-115	2	17	
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	103	74-128	2	18	
Bromodichloromethane	20		1.0	ug/L	20.0	0.10 U	102	72-129	6	16	
Bromoform	18		1.0	ug/L	20.0	0.20 U	88	73-119	0.2	44	
Bromomethane	17		1.0	ug/L	20.0	0.28 U	87	38-189	3	27	
Carbon Tetrachloride	20		1.0	ug/L	20.0	0.082 U	98	68-142	11	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	103	83-117	5	16	
Chloroethane	20		1.0	ug/L	20.0	0.18 U	101	45-213	5	26	
Chloroform	20		1.0	ug/L	20.0	0.083 U	99	78-138	3	17	
Chloromethane	18		1.0	ug/L	20.0	0.050 U	89	56-171	2	28	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E26031 - EPA 5030B_MS - Continued

Matrix Spike Dup (5E26031-MSD1) Continued

Prepared: 05/26/2015 16:13 Analyzed: 05/27/2015 02:00

Source: C506502-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.075 U	99	69-120	4	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	101	63-125	3	17	
Dibromochloromethane	21		1.0	ug/L	20.0	0.067 U	104	73-117	0.4	16	
Dibromomethane	19		1.0	ug/L	20.0	0.13 U	96	76-124	3	15	
Dichlorodifluoromethane	17		1.0	ug/L	20.0	0.091 U	84	25-161	11	48	
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	91	68-124	3	16	
Freon 113	36		1.0	ug/L	40.0	0.35 U	90	0-200	11	25	
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.15 U	91	63-114	4	19	
Isopropyl Ether	22		1.0	ug/L	20.0	0.21 U	112	70-130	2	30	
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	115	81-136	4	16	
m,p-Xylenes	39		2.0	ug/L	40.0	0.18 U	98	79-121	4	16	
Methylene Chloride	20		2.0	ug/L	20.0	0.070 U	101	68-128	1	17	
Methyl-tert-Butyl Ether	22		1.0	ug/L	20.0	0.12 U	111	10-127	0.04	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	77	50-127	0.2	19	
n-Butyl Benzene	20		1.0	ug/L	20.0	0.074 U	102	68-126	5	15	
n-Propyl Benzene	20		1.0	ug/L	20.0	0.073 U	100	76-125	4	16	
o-Xylene	23		1.0	ug/L	20.0	0.088 U	113	71-125	2	15	
sec-Butylbenzene	19		1.0	ug/L	20.0	0.053 U	97	75-122	6	17	
Styrene	21		1.0	ug/L	20.0	0.082 U	106	73-120	2	23	
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	110	70-137	3	22	
Tetrachloroethene	22		1.0	ug/L	20.0	0.099 U	109	40-181	12	26	
Toluene	20		1.0	ug/L	20.0	0.053 U	102	71-118	4	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	94	75-139	0.7	19	
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	106	62-152	0.5	16	
Trichloroethene	19		1.0	ug/L	20.0	0.13 U	94	75-115	8	18	
Trichlorofluoromethane	18		1.0	ug/L	20.0	0.15 U	90	68-183	8	22	
Vinyl chloride	18		1.0	ug/L	20.0	0.083 U	91	49-150	8	27	
Xylenes (Total)	62		1.0	ug/L	60.0	0.22 U	103	77-121	3	16	
4-Bromofluorobenzene	50			ug/L	50.0		100	70-130			
Dibromofluoromethane	50			ug/L	50.0		99	70-130			
Toluene-d8	52			ug/L	50.0		105	70-130			

Batch 5E27038 - EPA 5030B_MS

Blank (5E27038-BLK1)

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 02:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

Blank (5E27038-BLK1) Continued

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 02:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

Blank (5E27038-BLK1) Continued

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 02:11

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	48			ug/L	50.0		95	70-130			
Dibromofluoromethane	55			ug/L	50.0		111	70-130			
Toluene-d8	53			ug/L	50.0		105	70-130			

LCS (5E27038-BS1)

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 02:41

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1,1-Trichloroethane	21		1.0	ug/L	20.0		105	70-130			
1,1,2,2-Tetrachloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1,2-Trichloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1-Dichloroethane	21		1.0	ug/L	20.0		103	70-130			
1,1-Dichloroethene	19		1.0	ug/L	20.0		93	70-130			
1,1-Dichloropropene	21		1.0	ug/L	20.0		106	70-130			
1,2,3-Trichlorobenzene	15		1.0	ug/L	20.0		76	70-130			
1,2,3-Trichloropropane	19		1.0	ug/L	20.0		97	70-130			
1,2,4-Trichlorobenzene	15		1.0	ug/L	20.0		75	70-130			
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0		104	70-130			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0		85	70-130			
1,2-Dibromoethane	19		1.0	ug/L	20.0		97	70-130			
1,2-Dichlorobenzene	20		1.0	ug/L	20.0		100	70-130			
1,2-Dichloroethane	21		1.0	ug/L	20.0		105	70-130			
1,2-Dichloropropane	20		1.0	ug/L	20.0		100	70-130			
1,3,5-Trimethylbenzene	20		1.0	ug/L	20.0		101	70-130			
1,3-Dichlorobenzene	20		1.0	ug/L	20.0		102	70-130			
1,3-Dichloropropane	19		1.0	ug/L	20.0		94	70-130			
1,4-Dichlorobenzene	18		1.0	ug/L	20.0		92	70-130			
2,2-Dichloropropane	19		1.0	ug/L	20.0		96	70-130			
2-Chlorotoluene	21		1.0	ug/L	20.0		105	70-130			
4-Chlorotoluene	22		1.0	ug/L	20.0		108	70-130			
4-Isopropyltoluene	19		1.0	ug/L	20.0		94	70-130			
Benzene	20		1.0	ug/L	20.0		99	70-130			
Bromobenzene	19		1.0	ug/L	20.0		93	70-130			
Bromochloromethane	21		1.0	ug/L	20.0		107	70-130			
Bromodichloromethane	21		1.0	ug/L	20.0		105	70-130			
Bromoform	18		1.0	ug/L	20.0		88	70-130			
Bromomethane	19		1.0	ug/L	20.0		93	60-140			
Carbon Tetrachloride	21		1.0	ug/L	20.0		104	70-130			
Chlorobenzene	21		1.0	ug/L	20.0		104	70-130			
Chloroethane	22		1.0	ug/L	20.0		111	60-140			
Chloroform	20		1.0	ug/L	20.0		101	70-130			
Chloromethane	18		1.0	ug/L	20.0		89	60-140			
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0		100	70-130			
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0		100	70-130			
Dibromochloromethane	20		1.0	ug/L	20.0		101	70-130			
Dibromomethane	20		1.0	ug/L	20.0		98	70-130			
Dichlorodifluoromethane	17		1.0	ug/L	20.0		84	60-140			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

LCS (5E27038-BS1) Continued

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 02:41

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Ethylbenzene	18		1.0	ug/L	20.0		88	70-130			
Freon 113	36		1.0	ug/L	40.0		91	70-130			
Hexachlorobutadiene	17		1.0	ug/L	20.0		83	70-130			
Isopropyl Ether	22		1.0	ug/L	20.0		111	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0		113	70-130			
m,p-Xylenes	39		2.0	ug/L	40.0		97	70-130			
Methylene Chloride	20		2.0	ug/L	20.0		102	70-130			
Methyl-tert-Butyl Ether	22		1.0	ug/L	20.0		110	70-130			
Naphthalene	14		1.0	ug/L	20.0		70	70-130			
n-Butyl Benzene	20		1.0	ug/L	20.0		100	70-130			
n-Propyl Benzene	20		1.0	ug/L	20.0		100	70-130			
o-Xylene	22		1.0	ug/L	20.0		110	70-130			
sec-Butylbenzene	19		1.0	ug/L	20.0		97	70-130			
Styrene	21		1.0	ug/L	20.0		104	70-130			
tert-Butylbenzene	22		1.0	ug/L	20.0		108	70-130			
Tetrachloroethene	19		1.0	ug/L	20.0		96	70-130			
Toluene	20		1.0	ug/L	20.0		102	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		93	70-130			
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0		101	70-130			
Trichloroethene	19		1.0	ug/L	20.0		96	70-130			
Trichlorofluoromethane	20		1.0	ug/L	20.0		98	60-140			
Vinyl chloride	18		1.0	ug/L	20.0		92	60-140			
Xylenes (Total)	61		1.0	ug/L	60.0		101	70-130			
4-Bromofluorobenzene	50			ug/L	50.0		100	70-130			
Dibromofluoromethane	51			ug/L	50.0		102	70-130			
Toluene-d8	54			ug/L	50.0		107	70-130			

Matrix Spike (5E27038-MS1)

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 03:11

Source: C506502-10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	99	71-117			
1,1,1-Trichloroethane	21		1.0	ug/L	20.0	0.15 U	107	72-143			
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133			
1,1,2-Trichloroethane	21		1.0	ug/L	20.0	0.068 U	103	67-118			
1,1-Dichloroethane	21		1.0	ug/L	20.0	0.050 U	106	79-141			
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.15 U	96	75-133			
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	107	70-129			
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	79	62-117			
1,2,3-Trichloropropane	20		1.0	ug/L	20.0	0.15 U	101	58-140			
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0	0.097 U	79	59-122			
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0	0.067 U	107	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	85	37-157			
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	101	66-123			
1,2-Dichlorobenzene	21		1.0	ug/L	20.0	0.052 U	104	76-116			
1,2-Dichloroethane	22		1.0	ug/L	20.0	0.082 U	109	72-151			
1,2-Dichloropropane	21		1.0	ug/L	20.0	0.098 U	103	78-125			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0	0.10 U	105	77-129			
1,3-Dichlorobenzene	21		1.0	ug/L	20.0	0.092 U	105	76-119			
1,3-Dichloropropane	20		1.0	ug/L	20.0	0.15 U	98	60-129			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

Matrix Spike (5E27038-MS1) Continued

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 03:11

Source: C506502-10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	95	76-122			
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	100	21-167			
2-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	108	73-135			
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	110	76-134			
4-Isopropyltoluene	20		1.0	ug/L	20.0	0.066 U	98	75-127			
Benzene	20		1.0	ug/L	20.0	0.050 U	102	81-134			
Bromobenzene	20		1.0	ug/L	20.0	0.13 U	98	72-115			
Bromochloromethane	22		1.0	ug/L	20.0	0.11 U	109	74-128			
Bromodichloromethane	22		1.0	ug/L	20.0	0.10 U	108	72-129			
Bromoform	18		1.0	ug/L	20.0	0.20 U	88	73-119			
Bromomethane	19		1.0	ug/L	20.0	0.28 U	95	38-189			
Carbon Tetrachloride	21		1.0	ug/L	20.0	0.082 U	106	68-142			
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	105	83-117			
Chloroethane	22		1.0	ug/L	20.0	0.18 U	109	45-213			
Chloroform	21		1.0	ug/L	20.0	0.083 U	105	78-138			
Chloromethane	19		1.0	ug/L	20.0	0.050 U	93	56-171			
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.075 U	102	69-120			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.073 U	103	63-125			
Dibromochloromethane	21		1.0	ug/L	20.0	0.067 U	104	73-117			
Dibromomethane	21		1.0	ug/L	20.0	0.13 U	104	76-124			
Dichlorodifluoromethane	19		1.0	ug/L	20.0	0.091 U	96	25-161			
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	90	68-124			
Freon 113	41		1.0	ug/L	40.0	0.35 U	102	0-200			
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.63	85	63-114			
Isopropyl Ether	23		1.0	ug/L	20.0	0.21 U	114	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	116	81-136			
m,p-Xylenes	40		2.0	ug/L	40.0	0.18 U	100	79-121			
Methylene Chloride	21		2.0	ug/L	20.0	0.070 U	106	68-128			
Methyl-tert-Butyl Ether	23		1.0	ug/L	20.0	0.12 U	114	10-127			
Naphthalene	15		1.0	ug/L	20.0	0.086 U	75	50-127			
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	105	68-126			
n-Propyl Benzene	20		1.0	ug/L	20.0	0.073 U	102	76-125			
o-Xylene	23		1.0	ug/L	20.0	0.088 U	114	71-125			
sec-Butylbenzene	20		1.0	ug/L	20.0	0.053 U	100	75-122			
Styrene	21		1.0	ug/L	20.0	0.082 U	106	73-120			
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	111	70-137			
Tetrachloroethene	32		1.0	ug/L	20.0	0.099 U	158	40-181			
Toluene	21		1.0	ug/L	20.0	0.053 U	105	71-118			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	96	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	104	62-152			
Trichloroethene	21		1.0	ug/L	20.0	0.13 U	104	75-115			
Trichlorofluoromethane	21		1.0	ug/L	20.0	0.15 U	103	68-183			
Vinyl chloride	20		1.0	ug/L	20.0	0.083 U	101	49-150			
Xylenes (Total)	63		1.0	ug/L	60.0	0.22 U	105	77-121			
4-Bromofluorobenzene	50			ug/L	50.0		101	70-130			
Dibromofluoromethane	52			ug/L	50.0		104	70-130			
Toluene-d8	54			ug/L	50.0		108	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

Matrix Spike Dup (5E27038-MSD1)

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 03:41

Source: C506502-10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	99	71-117	0.5	16	
1,1,1-Trichloroethane	21		1.0	ug/L	20.0	0.15 U	106	72-143	0.8	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133	0.2	16	
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	99	67-118	4	18	
1,1-Dichloroethane	21		1.0	ug/L	20.0	0.050 U	105	79-141	0.8	19	
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.15 U	96	75-133	0.2	20	
1,1-Dichloropropene	22		1.0	ug/L	20.0	0.063 U	108	70-129	0.3	17	
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	79	62-117	1	17	
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	96	58-140	5	17	
1,2,4-Trichlorobenzene	15		1.0	ug/L	20.0	0.097 U	77	59-122	2	17	
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0	0.067 U	105	74-123	2	18	
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	84	37-157	2	18	
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	100	66-123	0.9	15	
1,2-Dichlorobenzene	20		1.0	ug/L	20.0	0.052 U	102	76-116	2	16	
1,2-Dichloroethane	21		1.0	ug/L	20.0	0.082 U	103	72-151	6	16	
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	100	78-125	3	19	
1,3,5-Trimethylbenzene	20		1.0	ug/L	20.0	0.10 U	102	77-129	3	16	
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	102	76-119	2	17	
1,3-Dichloropropane	20		1.0	ug/L	20.0	0.15 U	98	60-129	0.6	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	92	76-122	3	16	
2,2-Dichloropropane	19		1.0	ug/L	20.0	0.12 U	96	21-167	4	20	
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	105	73-135	2	16	
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	109	76-134	1	16	
4-Isopropyltoluene	19		1.0	ug/L	20.0	0.066 U	96	75-127	2	17	
Benzene	20		1.0	ug/L	20.0	0.050 U	98	81-134	4	17	
Bromobenzene	19		1.0	ug/L	20.0	0.13 U	95	72-115	3	17	
Bromochloromethane	21		1.0	ug/L	20.0	0.11 U	104	74-128	4	18	
Bromodichloromethane	21		1.0	ug/L	20.0	0.10 U	103	72-129	4	16	
Bromoform	17		1.0	ug/L	20.0	0.20 U	87	73-119	0.8	44	
Bromomethane	20		1.0	ug/L	20.0	0.28 U	98	38-189	3	27	
Carbon Tetrachloride	21		1.0	ug/L	20.0	0.082 U	103	68-142	3	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	104	83-117	0.7	16	
Chloroethane	22		1.0	ug/L	20.0	0.18 U	108	45-213	0.6	26	
Chloroform	21		1.0	ug/L	20.0	0.083 U	103	78-138	1	17	
Chloromethane	18		1.0	ug/L	20.0	0.050 U	92	56-171	2	28	
cis-1,2-Dichloroethene	21		1.0	ug/L	20.0	0.075 U	103	69-120	1	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	99	63-125	5	17	
Dibromochloromethane	20		1.0	ug/L	20.0	0.067 U	102	73-117	2	16	
Dibromomethane	20		1.0	ug/L	20.0	0.13 U	98	76-124	6	15	
Dichlorodifluoromethane	18		1.0	ug/L	20.0	0.091 U	89	25-161	8	48	
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	90	68-124	0.3	16	
Freon 113	39		1.0	ug/L	40.0	0.35 U	98	0-200	4	25	
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.63	84	63-114	1	19	
Isopropyl Ether	23		1.0	ug/L	20.0	0.21 U	114	70-130	0.2	30	
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	114	81-136	1	16	
m,p-Xylenes	39		2.0	ug/L	40.0	0.18 U	98	79-121	2	16	
Methylene Chloride	21		2.0	ug/L	20.0	0.070 U	104	68-128	1	17	
Methyl-tert-Butyl Ether	23		1.0	ug/L	20.0	0.12 U	114	10-127	0.3	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	74	50-127	1	19	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E27038 - EPA 5030B_MS - Continued

Matrix Spike Dup (5E27038-MSD1) Continued

Prepared: 05/27/2015 15:01 Analyzed: 05/28/2015 03:41

Source: C506502-10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	103	68-126	2	15	
n-Propyl Benzene	20		1.0	ug/L	20.0	0.073 U	100	76-125	2	16	
o-Xylene	22		1.0	ug/L	20.0	0.088 U	110	71-125	3	15	
sec-Butylbenzene	20		1.0	ug/L	20.0	0.053 U	98	75-122	2	17	
Styrene	21		1.0	ug/L	20.0	0.082 U	104	73-120	2	23	
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	109	70-137	2	22	
Tetrachloroethene	23		1.0	ug/L	20.0	0.099 U	113	40-181	33	26	
Toluene	21		1.0	ug/L	20.0	0.053 U	103	71-118	2	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	95	75-139	2	19	
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.080 U	102	62-152	1	16	
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	99	75-115	5	18	
Trichlorofluoromethane	20		1.0	ug/L	20.0	0.15 U	100	68-183	4	22	
Vinyl chloride	20		1.0	ug/L	20.0	0.083 U	100	49-150	1	27	
Xylenes (Total)	61		1.0	ug/L	60.0	0.22 U	102	77-121	3	16	
4-Bromofluorobenzene	50			ug/L	50.0		101	70-130			
Dibromofluoromethane	52			ug/L	50.0		103	70-130			
Toluene-d8	53			ug/L	50.0		106	70-130			

Batch 5E29016 - EPA 5030B_MS

Blank (5E29016-BLK1)

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 10:36

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

Blank (5E29016-BLK1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 10:36

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	47			ug/L	50.0		95	70-130			
Dibromofluoromethane	50			ug/L	50.0		100	70-130			
Toluene-d8	52			ug/L	50.0		105	70-130			

LCS (5E29016-BS1)

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 11:06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0		94	70-130			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0		92	70-130			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0		90	70-130			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0		96	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		93	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

LCS (5E29016-BS1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 11:06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	17		1.0	ug/L	20.0		86	70-130			
1,1-Dichloropropene	20		1.0	ug/L	20.0		102	70-130			
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0		80	70-130			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0		88	70-130			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0		83	70-130			
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0		104	70-130			
1,2-Dibromo-3-chloropropane	15		1.0	ug/L	20.0		73	70-130			
1,2-Dibromoethane	19		1.0	ug/L	20.0		96	70-130			
1,2-Dichlorobenzene	20		1.0	ug/L	20.0		100	70-130			
1,2-Dichloroethane	19		1.0	ug/L	20.0		93	70-130			
1,2-Dichloropropane	20		1.0	ug/L	20.0		101	70-130			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0		103	70-130			
1,3-Dichlorobenzene	21		1.0	ug/L	20.0		103	70-130			
1,3-Dichloropropane	19		1.0	ug/L	20.0		94	70-130			
1,4-Dichlorobenzene	18		1.0	ug/L	20.0		91	70-130			
2,2-Dichloropropane	23		1.0	ug/L	20.0		113	70-130			
2-Chlorotoluene	21		1.0	ug/L	20.0		103	70-130			
4-Chlorotoluene	21		1.0	ug/L	20.0		107	70-130			
4-Isopropyltoluene	19		1.0	ug/L	20.0		97	70-130			
Benzene	19		1.0	ug/L	20.0		96	70-130			
Bromobenzene	19		1.0	ug/L	20.0		94	70-130			
Bromochloromethane	20		1.0	ug/L	20.0		102	70-130			
Bromodichloromethane	19		1.0	ug/L	20.0		96	70-130			
Bromoform	17		1.0	ug/L	20.0		83	70-130			
Bromomethane	13		1.0	ug/L	20.0		66	60-140			
Carbon Tetrachloride	19		1.0	ug/L	20.0		93	70-130			
Chlorobenzene	20		1.0	ug/L	20.0		102	70-130			
Chloroethane	18		1.0	ug/L	20.0		89	60-140			
Chloroform	18		1.0	ug/L	20.0		92	70-130			
Chloromethane	17		1.0	ug/L	20.0		84	60-140			
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0		101	70-130			
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0		100	70-130			
Dibromochloromethane	20		1.0	ug/L	20.0		98	70-130			
Dibromomethane	18		1.0	ug/L	20.0		92	70-130			
Dichlorodifluoromethane	16		1.0	ug/L	20.0		78	60-140			
Ethylbenzene	18		1.0	ug/L	20.0		88	70-130			
Freon 113	37		1.0	ug/L	40.0		93	70-130			
Hexachlorobutadiene	18		1.0	ug/L	20.0		92	70-130			
Isopropyl Ether	22		1.0	ug/L	20.0		108	70-130			
Isopropylbenzene	22		1.0	ug/L	20.0		112	70-130			
m,p-Xylenes	38		2.0	ug/L	40.0		95	70-130			
Methylene Chloride	18		2.0	ug/L	20.0		92	70-130			
Methyl-tert-Butyl Ether	21		1.0	ug/L	20.0		105	70-130			
Naphthalene	15		1.0	ug/L	20.0		73	70-130			
n-Butyl Benzene	21		1.0	ug/L	20.0		106	70-130			
n-Propyl Benzene	20		1.0	ug/L	20.0		99	70-130			
o-Xylene	22		1.0	ug/L	20.0		110	70-130			
sec-Butylbenzene	19		1.0	ug/L	20.0		97	70-130			
Styrene	21		1.0	ug/L	20.0		103	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

LCS (5E29016-BS1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 11:06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tert-Butylbenzene	22		1.0	ug/L	20.0		109	70-130			
Tetrachloroethene	20		1.0	ug/L	20.0		99	70-130			
Toluene	20		1.0	ug/L	20.0		102	70-130			
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0		88	70-130			
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0		101	70-130			
Trichloroethene	19		1.0	ug/L	20.0		97	70-130			
Trichlorofluoromethane	16		1.0	ug/L	20.0		78	60-140			
Vinyl chloride	18		1.0	ug/L	20.0		88	60-140			
Xylenes (Total)	60		1.0	ug/L	60.0		100	70-130			
4-Bromofluorobenzene	49			ug/L	50.0		98	70-130			
Dibromofluoromethane	49			ug/L	50.0		98	70-130			
Toluene-d8	54			ug/L	50.0		107	70-130			

Matrix Spike (5E29016-MS1)

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 11:36

Source: C506572-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.091 U	94	71-117			
1,1,1-Trichloroethane	19		1.0	ug/L	20.0	0.15 U	93	72-143			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	89	59-133			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	94	67-118			
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	95	79-141			
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	88	75-133			
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	104	70-129			
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	80	62-117			
1,2,3-Trichloropropane	17		1.0	ug/L	20.0	0.15 U	85	58-140			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	83	59-122			
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0	0.067 U	104	74-123			
1,2-Dibromo-3-chloropropane	15		1.0	ug/L	20.0	0.48 U	73	37-157			
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	95	66-123			
1,2-Dichlorobenzene	20		1.0	ug/L	20.0	0.052 U	100	76-116			
1,2-Dichloroethane	18		1.0	ug/L	20.0	0.082 U	92	72-151			
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	100	78-125			
1,3,5-Trimethylbenzene	20		1.0	ug/L	20.0	0.10 U	102	77-129			
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	102	76-119			
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	92	60-129			
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	92	76-122			
2,2-Dichloropropane	23		1.0	ug/L	20.0	0.12 U	115	21-167			
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	103	73-135			
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	108	76-134			
4-Isopropyltoluene	20		1.0	ug/L	20.0	0.066 U	98	75-127			
Benzene	19		1.0	ug/L	20.0	0.050 U	96	81-134			
Bromobenzene	19		1.0	ug/L	20.0	0.13 U	94	72-115			
Bromochloromethane	20		1.0	ug/L	20.0	0.11 U	99	74-128			
Bromodichloromethane	19		1.0	ug/L	20.0	0.10 U	96	72-129			
Bromoform	16		1.0	ug/L	20.0	0.20 U	81	73-119			
Bromomethane	15		1.0	ug/L	20.0	0.28 U	73	38-189			
Carbon Tetrachloride	19		1.0	ug/L	20.0	0.082 U	94	68-142			
Chlorobenzene	20		1.0	ug/L	20.0	0.069 U	101	83-117			
Chloroethane	18		1.0	ug/L	20.0	0.18 U	92	45-213			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

Matrix Spike (5E29016-MS1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 11:36

Source: C506572-03

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroform	19		1.0	ug/L	20.0	0.083 U	93	78-138			
Chloromethane	17		1.0	ug/L	20.0	0.050 U	85	56-171			
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.075 U	102	69-120			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.073 U	103	63-125			
Dibromochloromethane	19		1.0	ug/L	20.0	0.067 U	96	73-117			
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	91	76-124			
Dichlorodifluoromethane	16		1.0	ug/L	20.0	0.091 U	79	25-161			
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	90	68-124			
Freon 113	38		1.0	ug/L	40.0	0.35 U	95	0-200			
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.15 U	92	63-114			
Isopropyl Ether	22		1.0	ug/L	20.0	0.21 U	111	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	114	81-136			
m,p-Xylenes	38		2.0	ug/L	40.0	0.18 U	96	79-121			
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	94	68-128			
Methyl-tert-Butyl Ether	21		1.0	ug/L	20.0	0.12 U	105	10-127			
Naphthalene	15		1.0	ug/L	20.0	0.086 U	73	50-127			
n-Butyl Benzene	22		1.0	ug/L	20.0	0.074 U	108	68-126			
n-Propyl Benzene	20		1.0	ug/L	20.0	0.073 U	99	76-125			
o-Xylene	22		1.0	ug/L	20.0	0.088 U	112	71-125			
sec-Butylbenzene	20		1.0	ug/L	20.0	0.053 U	99	75-122			
Styrene	21		1.0	ug/L	20.0	0.082 U	106	73-120			
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	110	70-137			
Tetrachloroethene	20		1.0	ug/L	20.0	0.099 U	99	40-181			
Toluene	20		1.0	ug/L	20.0	0.053 U	101	71-118			
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.11 U	90	75-139			
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.080 U	101	62-152			
Trichloroethene	19		1.0	ug/L	20.0	0.13 U	96	75-115			
Trichlorofluoromethane	16		1.0	ug/L	20.0	0.15 U	79	68-183			
Vinyl chloride	18		1.0	ug/L	20.0	0.083 U	90	49-150			
Xylenes (Total)	61		1.0	ug/L	60.0	0.22 U	101	77-121			
4-Bromofluorobenzene	49			ug/L	50.0		98	70-130			
Dibromofluoromethane	49			ug/L	50.0		98	70-130			
Toluene-d8	53			ug/L	50.0		106	70-130			

Matrix Spike Dup (5E29016-MSD1)

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 12:06

Source: C506572-03

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.091 U	97	71-117	3	16	
1,1,1-Trichloroethane	19		1.0	ug/L	20.0	0.15 U	93	72-143	0.4	18	
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	91	59-133	3	16	
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	98	67-118	4	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	97	79-141	1	19	
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	89	75-133	1	20	
1,1-Dichloropropene	21		1.0	ug/L	20.0	0.063 U	104	70-129	0.1	17	
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	81	62-117	2	17	
1,2,3-Trichloropropane	18		1.0	ug/L	20.0	0.15 U	92	58-140	8	17	
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	85	59-122	2	17	
1,2,4-Trimethylbenzene	21		1.0	ug/L	20.0	0.067 U	103	74-123	0.8	18	
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0	0.48 U	78	37-157	6	18	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

Matrix Spike Dup (5E29016-MSD1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 12:06

Source: C506572-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	96	66-123	2	15	
1,2-Dichlorobenzene	20		1.0	ug/L	20.0	0.052 U	100	76-116	0.6	16	
1,2-Dichloroethane	18		1.0	ug/L	20.0	0.082 U	90	72-151	2	16	
1,2-Dichloropropane	20		1.0	ug/L	20.0	0.098 U	99	78-125	1	19	
1,3,5-Trimethylbenzene	20		1.0	ug/L	20.0	0.10 U	102	77-129	0.1	16	
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	102	76-119	0	17	
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	96	60-129	4	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	91	76-122	1	16	
2,2-Dichloropropane	22		1.0	ug/L	20.0	0.12 U	112	21-167	2	20	
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	104	73-135	0.9	16	
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	108	76-134	0.6	16	
4-Isopropyltoluene	19		1.0	ug/L	20.0	0.066 U	97	75-127	0.9	17	
Benzene	19		1.0	ug/L	20.0	0.050 U	95	81-134	1	17	
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	92	72-115	2	17	
Bromochloromethane	20		1.0	ug/L	20.0	0.11 U	102	74-128	3	18	
Bromodichloromethane	19		1.0	ug/L	20.0	0.10 U	96	72-129	0.3	16	
Bromoform	17		1.0	ug/L	20.0	0.20 U	84	73-119	4	44	
Bromomethane	15		1.0	ug/L	20.0	0.28 U	74	38-189	1	27	
Carbon Tetrachloride	18		1.0	ug/L	20.0	0.082 U	92	68-142	2	17	
Chlorobenzene	20		1.0	ug/L	20.0	0.069 U	102	83-117	0.9	16	
Chloroethane	19		1.0	ug/L	20.0	0.18 U	93	45-213	0.9	26	
Chloroform	19		1.0	ug/L	20.0	0.083 U	93	78-138	0.6	17	
Chloromethane	17		1.0	ug/L	20.0	0.050 U	85	56-171	0.6	28	
cis-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.075 U	102	69-120	0.8	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	101	63-125	1	17	
Dibromochloromethane	20		1.0	ug/L	20.0	0.067 U	101	73-117	5	16	
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	90	76-124	1	15	
Dichlorodifluoromethane	15		1.0	ug/L	20.0	0.091 U	77	25-161	2	48	
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	89	68-124	0.7	16	
Freon 113	37		1.0	ug/L	40.0	0.35 U	93	0-200	2	25	
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.15 U	92	63-114	0.3	19	
Isopropyl Ether	22		1.0	ug/L	20.0	0.21 U	112	70-130	0.9	30	
Isopropylbenzene	22		1.0	ug/L	20.0	0.13 U	112	81-136	2	16	
m,p-Xylenes	38		2.0	ug/L	40.0	0.18 U	94	79-121	1	16	
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	93	68-128	1	17	
Methyl-tert-Butyl Ether	22		1.0	ug/L	20.0	0.12 U	109	10-127	4	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	77	50-127	5	19	
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	107	68-126	0.4	15	
n-Propyl Benzene	19		1.0	ug/L	20.0	0.073 U	97	76-125	2	16	
o-Xylene	22		1.0	ug/L	20.0	0.088 U	110	71-125	2	15	
sec-Butylbenzene	20		1.0	ug/L	20.0	0.053 U	98	75-122	1	17	
Styrene	21		1.0	ug/L	20.0	0.082 U	104	73-120	1	23	
tert-Butylbenzene	22		1.0	ug/L	20.0	0.094 U	110	70-137	0.1	22	
Tetrachloroethene	20		1.0	ug/L	20.0	0.099 U	99	40-181	0.2	26	
Toluene	21		1.0	ug/L	20.0	0.053 U	103	71-118	2	17	
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.11 U	91	75-139	1	19	
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	105	62-152	4	16	
Trichloroethene	19		1.0	ug/L	20.0	0.13 U	94	75-115	2	18	
Trichlorofluoromethane	16		1.0	ug/L	20.0	0.15 U	81	68-183	2	22	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5E29016 - EPA 5030B_MS - Continued

Matrix Spike Dup (5E29016-MSD1) Continued

Prepared: 05/29/2015 10:16 Analyzed: 05/29/2015 12:06

Source: C506572-03

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	18		1.0	ug/L	20.0	0.083 U	90	49-150	0.3	27	
Xylenes (Total)	60		1.0	ug/L	60.0	0.22 U	100	77-121	1	16	
4-Bromofluorobenzene	49			ug/L	50.0		98	70-130			
Dibromofluoromethane	50			ug/L	50.0		100	70-130			
Toluene-d8	52			ug/L	50.0		105	70-130			

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5E26019 - EPA 5030B

Blank (5E26019-BLK1)

Prepared: 05/26/2015 10:38 Analyzed: 05/26/2015 14:36

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	4.7	U	30.0	ug/L							
C9-C10 Aromatics	4.2	U	10	ug/L							
C9-C12 Aliphatics	10.0	U	30.0	ug/L							
2,5-Dibromotoluene (FID)	105			ug/L	100		105	70-130			
2,5-Dibromotoluene (PID)	96			ug/L	100		96	70-130			

LCS (5E26019-BS1)

Prepared: 05/26/2015 10:38 Analyzed: 05/26/2015 15:50

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	110		30.0	ug/L	120		92	70-130			
C9-C10 Aromatics	41		10	ug/L	40.0		104	70-130			
C9-C12 Aliphatics	136		30.0	ug/L	120		113	70-130			
2,5-Dibromotoluene (FID)	103			ug/L	100		103	70-130			
2,5-Dibromotoluene (PID)	100			ug/L	100		100	70-130			

LCS Dup (5E26019-BSD1)

Prepared: 05/26/2015 10:38 Analyzed: 05/26/2015 16:21

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	115		30.0	ug/L	120		96	70-130	4	25	
C9-C10 Aromatics	42		10	ug/L	40.0		106	70-130	2	25	
C9-C12 Aliphatics	121		30.0	ug/L	120		101	70-130	12	25	
2,5-Dibromotoluene (FID)	108			ug/L	100		108	70-130			
2,5-Dibromotoluene (PID)	100			ug/L	100		102	70-130			

Semivolatile Organic Compounds by GC - Quality Control

Batch 5E21018 - Same SVOA

Blank (5E21018-BLK1)

Prepared: 05/21/2015 12:30 Analyzed: 05/21/2015 16:53

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.031	U	0.10	ug/L							
1,2-Dibromo-3-chloropropane	0.0050	U	0.020	ug/L							
1,2-Dibromoethane	0.0053	U	0.020	ug/L							
1,1,1,2-Tetrachloroethane	0.25			ug/L	0.250		99	70-130			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GC - Quality Control

Batch 5E21018 - Same SVOA - Continued

LCS (5E21018-BS1)

Prepared: 05/21/2015 12:30 Analyzed: 05/21/2015 17:11

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.30		0.10	ug/L	0.250		119	70-130			
1,2-Dibromo-3-chloropropane	0.26		0.020	ug/L	0.250		103	70-130			
1,2-Dibromoethane	0.30		0.020	ug/L	0.250		120	70-130			
1,1,1,2-Tetrachloroethane	0.23			ug/L	0.250		94	70-130			

LCS Dup (5E21018-BS1)

Prepared: 05/21/2015 12:30 Analyzed: 05/21/2015 17:28

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.32		0.10	ug/L	0.250		130	70-130	8	18	
1,2-Dibromo-3-chloropropane	0.28		0.020	ug/L	0.250		111	70-130	7	20	
1,2-Dibromoethane	0.32		0.020	ug/L	0.250		129	70-130	7	18	
1,1,1,2-Tetrachloroethane	0.25			ug/L	0.250		100	70-130			

Matrix Spike (5E21018-MS1)

Prepared: 05/21/2015 12:30 Analyzed: 05/21/2015 17:47

Source: C506249-10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.30		0.10	ug/L	0.250	0.031 U	120	65-135			
1,2-Dibromo-3-chloropropane	0.27		0.020	ug/L	0.250	0.0050 U	108	65-135			
1,2-Dibromoethane	0.31		0.020	ug/L	0.250	0.0053 U	125	65-135			
1,1,1,2-Tetrachloroethane	0.25			ug/L	0.250		100	70-130			

Matrix Spike Dup (5E21018-MSD1)

Prepared: 05/21/2015 12:30 Analyzed: 05/21/2015 18:04

Source: C506249-10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.36		0.10	ug/L	0.250	0.031 U	142	65-135	17	18	QM-07
1,2-Dibromo-3-chloropropane	0.31		0.020	ug/L	0.250	0.0050 U	126	65-135	15	20	
1,2-Dibromoethane	0.37		0.020	ug/L	0.250	0.0053 U	148	65-135	17	18	QM-07
1,1,1,2-Tetrachloroethane	0.29			ug/L	0.250		115	70-130			

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5E27042 - EPA 3005A

Blank (5E27042-BLK1)

Prepared: 05/27/2015 16:19 Analyzed: 06/02/2015 15:08

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	3.10	U	10.0	ug/L							

LCS (5E27042-BS1)

Prepared: 05/27/2015 16:19 Analyzed: 06/02/2015 15:12

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	209		10.0	ug/L	200		104	80-120			

Matrix Spike (5E27042-MS1)

Prepared: 05/27/2015 16:19 Analyzed: 06/02/2015 15:19

Source: C504483-01

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	202		10.0	ug/L	200	3.10 U	101	75-125			

QUALITY CONTROL DATA

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5E27042 - EPA 3005A - Continued

Matrix Spike Dup (5E27042-MSD1)

Prepared: 05/27/2015 16:19 Analyzed: 06/02/2015 15:21

Source: C504483-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	203		10.0	ug/L	200	3.10 U	101	75-125	0.3	20	

Post Spike (5E27042-PS1)

Prepared: 05/27/2015 16:19 Analyzed: 06/02/2015 15:24

Source: C504483-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.205		0.0100	mg/L	0.200	8.34E-5	103	80-120			

FLAGS/NOTES AND DEFINITIONS

- B** The analyte was detected in the associated method blank.
- D** The sample was analyzed at dilution.
- J** The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
- U** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- E** The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
- MRL** Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
- ND** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- N** The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
- P** Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
- QM-07** The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Client Name <i>East Coast Environmental</i>		Project Number		Requested Turnaround Times							
Address <i>3815 Junction Blvd</i>		Project Name/Desc <i>Grocery Bag</i>		Requested Analysis							
City/ST/Zip <i>Rolling Me 27603</i>		PO # / Billing Info									
Tel <i>919 772 0268</i>		Reporting Contact <i>Tom Will</i>									
Fax <i>919 772 0468</i>		Billing Contact <i>Tom Will</i>									
Sampler(s) Name, Affiliation (Print)		Site Location / Time Zone									
Sampler(s) Signature											

62006
MADEP - VPT
(CDB) 504.1
Lead

Due / /

Lab Workorder *0506294*

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

 Standard

 Expedited

[illegible]

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	Condition Upon Receipt	Acceptable	Unacceptable
Comments/Special Reporting Requirements		Relinquished By <i>[Signature]</i>	Date/Time 5/20/15 11:06	Received By <i>[Signature]</i>	Date/Time 5/20/15 11:40	Condition Upon Receipt ✓ Acceptable		
		Relinquished By <i>[Signature]</i>	Date/Time 5/20/15 11:40	Received By <i>[Signature]</i>	Date/Time 5/20/15 11:40			
		Relinquished By	Date/Time	Received By	Date/Time	Condition Upon Receipt	Acceptable	Unacceptable
		Coder #'s & Temps on Receipt 2.0°C						

Sample Preservation Verification

ENCO Cary



Work Order: C506294

Client: East Coast Environmental (EA030)

Logged In: 20-May-15 12:05

Project: Grocery Bag

Project #: [none]

Logged By: John C King

C506294-01

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C506294-02

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

	Reagent Name	ID
1		
2		

	Reagent Name	ID
3		
4		

	Reagent Name	ID
5		
6		



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515

Wednesday, September 23, 2015

East Coast Environmental (EA030)

Attn: Tom Will

3815 Junction Blvd.

Raleigh, NC 27603

RE: Laboratory Results for

Project Number: [none], Project Name/Desc: Grocery Bag

ENCO Workorder(s): C511848

Dear Tom Will,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, September 11, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Bill Scott

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-8		Lab ID: C511848-01		Sampled: 09/09/15 14:15		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	09/23/15	09/14/15 10:45		09/14/15 13:47			
EPA 6010C	03/07/16	09/15/15 10:05		09/17/15 12:28			
Client ID: MW-8		Lab ID: C511848-01RE1		Sampled: 09/09/15 14:15		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
MAVPH	09/23/15	09/16/15 14:02		09/17/15 09:54			
SM 6200B-1997	09/23/15	09/18/15 09:25		09/21/15 21:14			
Client ID: MW-9		Lab ID: C511848-02		Sampled: 09/09/15 14:30		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	09/23/15	09/14/15 10:45		09/14/15 14:04			
EPA 6010C	03/07/16	09/15/15 10:05		09/17/15 12:30			
Client ID: MW-9		Lab ID: C511848-02RE1		Sampled: 09/09/15 14:30		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
MAVPH	09/23/15	09/16/15 14:02		09/17/15 10:25			
SM 6200B-1997	09/23/15	09/18/15 09:25		09/21/15 19:46			
Client ID: MW-10		Lab ID: C511848-03		Sampled: 09/09/15 14:45		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
EPA 504.1	09/23/15	09/14/15 10:45		09/14/15 14:22			
EPA 6010C	03/07/16	09/15/15 10:05		09/17/15 12:33			
MAVPH	09/23/15	09/16/15 14:02		09/16/15 20:16			
Client ID: MW-10		Lab ID: C511848-03RE1		Sampled: 09/09/15 14:45		Received: 09/11/15 11:30	
Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)			
SM 6200B-1997	09/23/15	09/18/15 09:25		09/22/15 19:06			

SAMPLE DETECTION SUMMARY

Client ID: MW-8		Lab ID: C511848-01					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Lead - Total	7.12	J	3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-8		Lab ID: C511848-01RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	480	D	1.3	20	ug/L	SM 6200B-1997	
1,3,5-Trimethylbenzene	130	D	2.0	20	ug/L	SM 6200B-1997	
Benzene	3200	D	1.0	20	ug/L	SM 6200B-1997	
C5-C8 Aliphatics	6040	D	47.0	300	ug/L	MAVPH	
C9-C10 Aromatics	2200	D	42	100	ug/L	MAVPH	
C9-C12 Aliphatics	2070	D	100	300	ug/L	MAVPH	
Ethylbenzene	540	D	2.0	20	ug/L	SM 6200B-1997	
Isopropyl Ether	34	D	4.2	20	ug/L	SM 6200B-1997	
Isopropylbenzene	49	D	2.6	20	ug/L	SM 6200B-1997	
m,p-Xylenes	560	D	3.6	40	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	930	D	2.4	20	ug/L	SM 6200B-1997	
Naphthalene	450	D	1.7	20	ug/L	SM 6200B-1997	
n-Propyl Benzene	110	D	1.5	20	ug/L	SM 6200B-1997	
o-Xylene	62	D	1.8	20	ug/L	SM 6200B-1997	
sec-Butylbenzene	12	JD	1.1	20	ug/L	SM 6200B-1997	
Toluene	59	D	1.1	20	ug/L	SM 6200B-1997	
Xylenes (Total)	620	D	4.4	20	ug/L	SM 6200B-1997	
Client ID: MW-9		Lab ID: C511848-02					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Lead - Total	10.7		3.10	10.0	ug/L	EPA 6010C	
Client ID: MW-9		Lab ID: C511848-02RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,3,5-Trimethylbenzene	3.6		0.10	1.0	ug/L	SM 6200B-1997	
Benzene	8.5		0.050	1.0	ug/L	SM 6200B-1997	
C5-C8 Aliphatics	176	D	9.4	60.0	ug/L	MAVPH	
C9-C10 Aromatics	530	D	8.4	20	ug/L	MAVPH	
C9-C12 Aliphatics	201	D	20.0	60.0	ug/L	MAVPH	
Ethylbenzene	2.0		0.10	1.0	ug/L	SM 6200B-1997	
Isopropyl Ether	6.3		0.21	1.0	ug/L	SM 6200B-1997	
Isopropylbenzene	20		0.13	1.0	ug/L	SM 6200B-1997	
m,p-Xylenes	13		0.18	2.0	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	16		0.12	1.0	ug/L	SM 6200B-1997	
Naphthalene	120		0.086	1.0	ug/L	SM 6200B-1997	
n-Propyl Benzene	33		0.073	1.0	ug/L	SM 6200B-1997	
o-Xylene	2.5		0.088	1.0	ug/L	SM 6200B-1997	
sec-Butylbenzene	2.2		0.053	1.0	ug/L	SM 6200B-1997	
Toluene	3.1		0.053	1.0	ug/L	SM 6200B-1997	
Xylenes (Total)	16		0.22	1.0	ug/L	SM 6200B-1997	
Client ID: MW-10		Lab ID: C511848-03					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C9-C10 Aromatics	5.6	J	4.2	10	ug/L	MAVPH	
Client ID: MW-10		Lab ID: C511848-03RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Isopropyl Ether	0.43	J	0.21	1.0	ug/L	SM 6200B-1997	

ANALYTICAL RESULTS

Description: MW-8

Lab Sample ID: C511848-01

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:15

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	20	1.8	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	20	3.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	20	1.7	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	20	1.4	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	20	1.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	20	3.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	20	1.3	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	20	5.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	20	3.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	20	1.9	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	480	D	ug/L	20	1.3	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	20	9.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	20	8.4	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	20	1.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	20	1.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	130	D	ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	20	1.8	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	20	3.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	20	2.4	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	20	1.3	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Benzene [71-43-2]^	3200	D	ug/L	20	1.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	20	2.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	20	2.2	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Bromoform [75-25-2]^	ND		ug/L	20	4.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	20	5.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	20	1.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	20	1.4	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	20	3.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Chloroform [67-66-3]^	ND		ug/L	20	1.7	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	20	1.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	20	1.5	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	20	1.5	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	20	1.3	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	20	2.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	20	1.8	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Ethylbenzene [100-41-4]^	540	D	ug/L	20	2.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	20	7.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	20	3.0	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Isopropyl Ether [108-20-3]^	34	D	ug/L	20	4.2	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Isopropylbenzene [98-82-8]^	49	D	ug/L	20	2.6	20	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	560	D	ug/L	20	3.6	40	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	20	1.4	40	5121013	SM 6200B-1997	09/21/15 21:14	MSZ	

ANALYTICAL RESULTS

Description: MW-8

Lab Sample ID: C511848-01

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:15

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	930	D	ug/L	20	2.4	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Naphthalene [91-20-3]^	450	D	ug/L	20	1.7	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	20	1.5	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
n-Propyl Benzene [103-65-1]^	110	D	ug/L	20	1.5	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
o-Xylene [95-47-6]^	62	D	ug/L	20	1.8	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
sec-Butylbenzene [135-98-8]^	12	JD	ug/L	20	1.1	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Styrene [100-42-5]^	ND		ug/L	20	1.6	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	20	1.9	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	20	2.0	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Toluene [108-88-3]^	59	D	ug/L	20	1.1	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	20	2.2	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	20	1.6	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	20	2.6	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	20	3.0	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	20	1.7	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Xylenes (Total) [1330-20-7]^	620	D	ug/L	20	4.4	20	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	55	1	50.0	109 %	70-130	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Dibromofluoromethane	55	1	50.0	109 %	70-130	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	
Toluene-d8	51	1	50.0	102 %	70-130	5I21013	SM 6200B-1997	09/21/15 21:14	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	6040	D	ug/L	10	47.0	300	5I16030	MAVPH	09/17/15 09:54	TAL	
C9-C10 Aromatics^	2200	D	ug/L	10	42	100	5I16030	MAVPH	09/17/15 09:54	TAL	
C9-C12 Aliphatics^	2070	D	ug/L	10	100	300	5I16030	MAVPH	09/17/15 09:54	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	107	1	100	107 %	70-130	5I16030	MAVPH	09/17/15 09:54	TAL	
2,5-Dibromotoluene (PID)	98	1	100	98 %	70-130	5I16030	MAVPH	09/17/15 09:54	TAL	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5I14012	EPA 504.1	09/14/15 13:47	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5I14012	EPA 504.1	09/14/15 13:47	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5I14012	EPA 504.1	09/14/15 13:47	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.32	1	0.250	129 %	70-130	5I14012	EPA 504.1	09/14/15 13:47	BIG	



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ANALYTICAL RESULTS

Description: MW-8

Lab Sample ID: C511848-01

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:15

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	7.12	J	ug/L	1	3.10	10.0	5115013	EPA 6010C	09/17/15 12:28	JDH	

ANALYTICAL RESULTS

Description: MW-9

Lab Sample ID: C511848-02

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:30

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/L	1	0.067	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	3.6		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Benzene [71-43-2]^	8.5		ug/L	1	0.050	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Ethylbenzene [100-41-4]^	2.0		ug/L	1	0.10	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Isopropyl Ether [108-20-3]^	6.3		ug/L	1	0.21	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Isopropylbenzene [98-82-8]^	20		ug/L	1	0.13	1.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	13		ug/L	1	0.18	2.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5121013	SM 6200B-1997	09/21/15 19:46	MSZ	

ANALYTICAL RESULTS

Description: MW-9

Lab Sample ID: C511848-02

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:30

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	16		ug/L	1	0.12	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Naphthalene [91-20-3]^	120		ug/L	1	0.086	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
n-Propyl Benzene [103-65-1]^	33		ug/L	1	0.073	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
o-Xylene [95-47-6]^	2.5		ug/L	1	0.088	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
sec-Butylbenzene [135-98-8]^	2.2		ug/L	1	0.053	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Toluene [108-88-3]^	3.1		ug/L	1	0.053	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Xylenes (Total) [1330-20-7]^	16		ug/L	1	0.22	1.0	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	55	1	50.0	110 %	70-130	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Dibromofluoromethane	51	1	50.0	102 %	70-130	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	
Toluene-d8	51	1	50.0	102 %	70-130	5I21013	SM 6200B-1997	09/21/15 19:46	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	176	D	ug/L	2	9.4	60.0	5I16030	MAVPH	09/17/15 10:25	TAL	
C9-C10 Aromatics^	530	D	ug/L	2	8.4	20	5I16030	MAVPH	09/17/15 10:25	TAL	
C9-C12 Aliphatics^	201	D	ug/L	2	20.0	60.0	5I16030	MAVPH	09/17/15 10:25	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	96.0	1	100	96 %	70-130	5I16030	MAVPH	09/17/15 10:25	TAL	
2,5-Dibromotoluene (PID)	94	1	100	94 %	70-130	5I16030	MAVPH	09/17/15 10:25	TAL	

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5I14012	EPA 504.1	09/14/15 14:04	BIG	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5I14012	EPA 504.1	09/14/15 14:04	BIG	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5I14012	EPA 504.1	09/14/15 14:04	BIG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane	0.21	1	0.250	83 %	70-130	5I14012	EPA 504.1	09/14/15 14:04	BIG	



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ANALYTICAL RESULTS

Description: MW-9

Lab Sample ID: C511848-02

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:30

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	10.7		ug/L	1	3.10	10.0	5115013	EPA 6010C	09/17/15 12:30	JDH	

ANALYTICAL RESULTS

Description: MW-10

Lab Sample ID: C511848-03

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:45

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/L	1	0.067	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Benzene [71-43-2]^	ND		ug/L	1	0.050	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Ethylbenzene [100-41-4]^	ND		ug/L	1	0.10	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Isopropyl Ether [108-20-3]^	0.43	J	ug/L	1	0.21	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Isopropylbenzene [98-82-8]^	ND		ug/L	1	0.13	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
m,p-Xylenes [108-38-3/106-42-3]^	ND		ug/L	1	0.18	2.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	

ANALYTICAL RESULTS

Description: MW-10

Lab Sample ID: C511848-03

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:45

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/L	1	0.12	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Naphthalene [91-20-3]^	ND		ug/L	1	0.086	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
n-Propyl Benzene [103-65-1]^	ND		ug/L	1	0.073	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
o-Xylene [95-47-6]^	ND		ug/L	1	0.088	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
sec-Butylbenzene [135-98-8]^	ND		ug/L	1	0.053	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Toluene [108-88-3]^	ND		ug/L	1	0.053	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Xylenes (Total) [1330-20-7]^	ND		ug/L	1	0.22	1.0	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	54	1	50.0	108 %	70-130	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Dibromofluoromethane	52	1	50.0	104 %	70-130	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	
Toluene-d8	51	1	50.0	102 %	70-130	5122019	SM 6200B-1997	09/22/15 19:06	MSZ	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte</u> [CAS Number]	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
C5-C8 Aliphatics^	ND		ug/L	1	4.7	30.0	5I16030	MAVPH	09/16/15 20:16	TAL	
C9-C10 Aromatics^	5.6	J	ug/L	1	4.2	10	5I16030	MAVPH	09/16/15 20:16	TAL	
C9-C12 Aliphatics^	ND		ug/L	1	10.0	30.0	5I16030	MAVPH	09/16/15 20:16	TAL	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene (FID)	96.5	1	100	97 %	70-130	5I16030	MAVPH	09/16/15 20:16	TAL		
2,5-Dibromotoluene (PID)	100	1	100	100 %	70-130	5I16030	MAVPH	09/16/15 20:16	TAL		

Semivolatile Organic Compounds by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.031	0.10	5I14012	EPA 504.1	09/14/15 14:22	B1G	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.0050	0.020	5I14012	EPA 504.1	09/14/15 14:22	B1G	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.0053	0.020	5I14012	EPA 504.1	09/14/15 14:22	B1G	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
1,1,1,2-Tetrachloroethane	0.29	1	0.250	117 %	70-130	5I14012	EPA 504.1	09/14/15 14:22	B1G		



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ANALYTICAL RESULTS

Description: MW-10

Lab Sample ID: C511848-03

Received: 09/11/15 11:30

Matrix: Water

Sampled: 09/09/15 14:45

Work Order: C511848

Project: Grocery Bag

Sampled By: Client

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Lead [7439-92-1]^	ND		ug/L	1	3.10	10.0	5115013	EPA 6010C	09/17/15 12:33	JDH	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS

Blank (5I17036-BLK1)

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 11:33

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS - Continued

Blank (5I17036-BLK1) Continued

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 11:33

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	53			ug/L	50.0		106	70-130			
Dibromofluoromethane	49			ug/L	50.0		98	70-130			
Toluene-d8	50			ug/L	50.0		100	70-130			

LCS (5I17036-BS1)

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 12:02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0		94	70-130			
1,1,1-Trichloroethane	17		1.0	ug/L	20.0		83	70-130			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0		90	70-130			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0		96	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		96	70-130			
1,1-Dichloroethene	17		1.0	ug/L	20.0		84	70-130			
1,1-Dichloropropene	18		1.0	ug/L	20.0		89	70-130			
1,2,3-Trichlorobenzene	18		1.0	ug/L	20.0		89	70-130			
1,2,3-Trichloropropane	21		1.0	ug/L	20.0		105	70-130			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0		84	70-130			
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0		90	70-130			
1,2-Dibromo-3-chloropropane	18		1.0	ug/L	20.0		88	70-130			
1,2-Dibromoethane	19		1.0	ug/L	20.0		94	70-130			
1,2-Dichlorobenzene	18		1.0	ug/L	20.0		92	70-130			
1,2-Dichloroethane	22		1.0	ug/L	20.0		112	70-130			
1,2-Dichloropropane	19		1.0	ug/L	20.0		93	70-130			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0		88	70-130			
1,3-Dichlorobenzene	19		1.0	ug/L	20.0		97	70-130			
1,3-Dichloropropane	18		1.0	ug/L	20.0		89	70-130			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0		93	70-130			
2,2-Dichloropropane	12		1.0	ug/L	20.0		59	70-130			
2-Chlorotoluene	18		1.0	ug/L	20.0		91	70-130			
4-Chlorotoluene	18		1.0	ug/L	20.0		90	70-130			
4-Isopropyltoluene	18		1.0	ug/L	20.0		88	70-130			
Benzene	18		1.0	ug/L	20.0		88	70-130			
Bromobenzene	19		1.0	ug/L	20.0		94	70-130			
Bromochloromethane	17		1.0	ug/L	20.0		83	70-130			
Bromodichloromethane	19		1.0	ug/L	20.0		94	70-130			

FINAL

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS - Continued

LCS (5I17036-BS1) Continued

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 12:02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromoform	18		1.0	ug/L	20.0		92	70-130			
Bromomethane	24		1.0	ug/L	20.0		118	60-140			
Carbon Tetrachloride	18		1.0	ug/L	20.0		88	70-130			
Chlorobenzene	19		1.0	ug/L	20.0		94	70-130			
Chloroethane	26		1.0	ug/L	20.0		131	60-140			
Chloroform	17		1.0	ug/L	20.0		84	70-130			
Chloromethane	18		1.0	ug/L	20.0		88	60-140			
cis-1,2-Dichloroethene	16		1.0	ug/L	20.0		82	70-130			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0		89	70-130			
Dibromochloromethane	19		1.0	ug/L	20.0		95	70-130			
Dibromomethane	19		1.0	ug/L	20.0		95	70-130			
Dichlorodifluoromethane	11		1.0	ug/L	20.0		57	60-140			
Ethylbenzene	18		1.0	ug/L	20.0		90	70-130			
Freon 113	32		1.0	ug/L	40.0		81	70-130			
Hexachlorobutadiene	17		1.0	ug/L	20.0		87	70-130			
Isopropyl Ether	18		1.0	ug/L	20.0		88	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0		88	70-130			
m,p-Xylenes	38		2.0	ug/L	40.0		94	70-130			
Methylene Chloride	19		2.0	ug/L	20.0		97	70-130			
Methyl-tert-Butyl Ether	15		1.0	ug/L	20.0		77	70-130			
Naphthalene	18		1.0	ug/L	20.0		92	70-130			
n-Butyl Benzene	17		1.0	ug/L	20.0		85	70-130			
n-Propyl Benzene	20		1.0	ug/L	20.0		98	70-130			
o-Xylene	20		1.0	ug/L	20.0		98	70-130			
sec-Butylbenzene	18		1.0	ug/L	20.0		91	70-130			
Styrene	19		1.0	ug/L	20.0		97	70-130			
tert-Butylbenzene	18		1.0	ug/L	20.0		90	70-130			
Tetrachloroethene	29		1.0	ug/L	20.0		147	70-130			
Toluene	18		1.0	ug/L	20.0		88	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		93	70-130			
trans-1,3-Dichloropropene	18		1.0	ug/L	20.0		92	70-130			
Trichloroethene	19		1.0	ug/L	20.0		94	70-130			
Trichlorofluoromethane	16		1.0	ug/L	20.0		80	60-140			
Vinyl chloride	17		1.0	ug/L	20.0		87	60-140			
Xylenes (Total)	57		1.0	ug/L	60.0		96	70-130			
4-Bromofluorobenzene	54			ug/L	50.0		108	70-130			
Dibromofluoromethane	50			ug/L	50.0		101	70-130			
Toluene-d8	53			ug/L	50.0		107	70-130			

Matrix Spike (5I17036-MS1)

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 12:32

Source: C512032-05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.091 U	90	71-117			
1,1,1-Trichloroethane	17		1.0	ug/L	20.0	0.15 U	84	72-143			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.085 U	86	59-133			
1,1,2-Trichloroethane	17		1.0	ug/L	20.0	0.068 U	87	67-118			
1,1-Dichloroethane	18		1.0	ug/L	20.0	0.050 U	91	79-141			
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.15 U	83	75-133			
1,1-Dichloropropene	17		1.0	ug/L	20.0	0.063 U	85	70-129			

FINAL

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS - Continued

Matrix Spike (5I17036-MS1) Continued

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 12:32

Source: C512032-05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.25 U	80	62-117			
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	95	58-140			
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0	0.097 U	79	59-122			
1,2,4-Trimethylbenzene	16		1.0	ug/L	20.0	0.067 U	80	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	84	37-157			
1,2-Dibromoethane	18		1.0	ug/L	20.0	0.42 U	90	66-123			
1,2-Dichlorobenzene	17		1.0	ug/L	20.0	0.052 U	84	76-116			
1,2-Dichloroethane	19		1.0	ug/L	20.0	0.082 U	97	72-151			
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	91	78-125			
1,3,5-Trimethylbenzene	16		1.0	ug/L	20.0	0.10 U	78	77-129			
1,3-Dichlorobenzene	17		1.0	ug/L	20.0	0.092 U	86	76-119			
1,3-Dichloropropane	17		1.0	ug/L	20.0	0.15 U	86	60-129			
1,4-Dichlorobenzene	17		1.0	ug/L	20.0	0.10 U	86	76-122			
2,2-Dichloropropane	11		1.0	ug/L	20.0	0.12 U	55	21-167			
2-Chlorotoluene	17		1.0	ug/L	20.0	0.10 U	83	73-135			
4-Chlorotoluene	16		1.0	ug/L	20.0	0.10 U	82	76-134			
4-Isopropyltoluene	16		1.0	ug/L	20.0	0.066 U	81	75-127			
Benzene	16		1.0	ug/L	20.0	0.050 U	82	81-134			
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	90	72-115			
Bromochloromethane	16		1.0	ug/L	20.0	0.11 U	79	74-128			
Bromodichloromethane	17		1.0	ug/L	20.0	0.10 U	85	72-129			
Bromoform	18		1.0	ug/L	20.0	0.20 U	91	73-119			
Bromomethane	22		1.0	ug/L	20.0	0.28 U	110	38-189			
Carbon Tetrachloride	17		1.0	ug/L	20.0	0.082 U	86	68-142			
Chlorobenzene	17		1.0	ug/L	20.0	0.069 U	86	83-117			
Chloroethane	27		1.0	ug/L	20.0	0.18 U	133	45-213			
Chloroform	16		1.0	ug/L	20.0	0.083 U	80	78-138			
Chloromethane	16		1.0	ug/L	20.0	0.050 U	81	56-171			
cis-1,2-Dichloroethene	15		1.0	ug/L	20.0	0.075 U	74	69-120			
cis-1,3-Dichloropropene	16		1.0	ug/L	20.0	0.073 U	81	63-125			
Dibromochloromethane	18		1.0	ug/L	20.0	0.067 U	91	73-117			
Dibromomethane	17		1.0	ug/L	20.0	0.13 U	83	76-124			
Dichlorodifluoromethane	13		1.0	ug/L	20.0	0.091 U	63	25-161			
Ethylbenzene	17		1.0	ug/L	20.0	0.10 U	86	68-124			
Freon 113	34		1.0	ug/L	40.0	0.35 U	86	0-200			
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.15 U	83	63-114			
Isopropyl Ether	17		1.0	ug/L	20.0	0.21 U	84	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	90	81-136			
m,p-Xylenes	36		2.0	ug/L	40.0	0.18 U	89	79-121			
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	93	68-128			
Methyl-tert-Butyl Ether	15		1.0	ug/L	20.0	0.12 U	75	10-127			
Naphthalene	16		1.0	ug/L	20.0	0.62	79	50-127			
n-Butyl Benzene	16		1.0	ug/L	20.0	0.074 U	81	68-126			
n-Propyl Benzene	18		1.0	ug/L	20.0	0.073 U	92	76-125			
o-Xylene	18		1.0	ug/L	20.0	0.088 U	91	71-125			
sec-Butylbenzene	17		1.0	ug/L	20.0	0.053 U	83	75-122			
Styrene	18		1.0	ug/L	20.0	0.082 U	89	73-120			
tert-Butylbenzene	17		1.0	ug/L	20.0	0.094 U	84	70-137			
Tetrachloroethene	29		1.0	ug/L	20.0	0.099 U	146	40-181			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS - Continued

Matrix Spike (5I17036-MS1) Continued

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 12:32

Source: C512032-05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene	17		1.0	ug/L	20.0	0.053 U	86	71-118			
trans-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.11 U	87	75-139			
trans-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.080 U	88	62-152			
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	90	75-115			
Trichlorofluoromethane	17		1.0	ug/L	20.0	0.15 U	84	68-183			
Vinyl chloride	17		1.0	ug/L	20.0	0.083 U	84	49-150			
Xylenes (Total)	54		1.0	ug/L	60.0	0.22 U	90	77-121			
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	52			ug/L	50.0		104	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

Matrix Spike Dup (5I17036-MSD1)

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 13:02

Source: C512032-05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.091 U	86	71-117	5	16	
1,1,1-Trichloroethane	16		1.0	ug/L	20.0	0.15 U	78	72-143	8	18	
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	88	59-133	1	16	
1,1,2-Trichloroethane	17		1.0	ug/L	20.0	0.068 U	86	67-118	1	18	
1,1-Dichloroethane	17		1.0	ug/L	20.0	0.050 U	87	79-141	5	19	
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.15 U	81	75-133	2	20	
1,1-Dichloropropene	16		1.0	ug/L	20.0	0.063 U	82	70-129	3	17	
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.25 U	87	62-117	8	17	
1,2,3-Trichloropropane	18		1.0	ug/L	20.0	0.15 U	92	58-140	3	17	
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0	0.097 U	81	59-122	2	17	
1,2,4-Trimethylbenzene	16		1.0	ug/L	20.0	0.067 U	80	74-123	1	18	
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0	0.48 U	82	37-157	2	18	
1,2-Dibromoethane	17		1.0	ug/L	20.0	0.42 U	86	66-123	4	15	
1,2-Dichlorobenzene	17		1.0	ug/L	20.0	0.052 U	86	76-116	3	16	
1,2-Dichloroethane	20		1.0	ug/L	20.0	0.082 U	101	72-151	4	16	
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	90	78-125	2	19	
1,3,5-Trimethylbenzene	16		1.0	ug/L	20.0	0.10 U	81	77-129	5	16	
1,3-Dichlorobenzene	18		1.0	ug/L	20.0	0.092 U	91	76-119	6	17	
1,3-Dichloropropane	17		1.0	ug/L	20.0	0.15 U	84	60-129	3	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	89	76-122	4	16	
2,2-Dichloropropane	11		1.0	ug/L	20.0	0.12 U	55	21-167	1	20	
2-Chlorotoluene	17		1.0	ug/L	20.0	0.10 U	84	73-135	0.5	16	
4-Chlorotoluene	17		1.0	ug/L	20.0	0.10 U	83	76-134	1	16	
4-Isopropyltoluene	16		1.0	ug/L	20.0	0.066 U	82	75-127	1	17	
Benzene	16		1.0	ug/L	20.0	0.050 U	80	81-134	3	17	
Bromobenzene	17		1.0	ug/L	20.0	0.13 U	84	72-115	7	17	
Bromochloromethane	16		1.0	ug/L	20.0	0.11 U	80	74-128	2	18	
Bromodichloromethane	17		1.0	ug/L	20.0	0.10 U	86	72-129	0.4	16	
Bromoform	18		1.0	ug/L	20.0	0.20 U	89	73-119	3	44	
Bromomethane	22		1.0	ug/L	20.0	0.28 U	110	38-189	0.05	27	
Carbon Tetrachloride	17		1.0	ug/L	20.0	0.082 U	84	68-142	1	17	
Chlorobenzene	17		1.0	ug/L	20.0	0.069 U	85	83-117	2	16	
Chloroethane	26		1.0	ug/L	20.0	0.18 U	128	45-213	4	26	
Chloroform	16		1.0	ug/L	20.0	0.083 U	79	78-138	2	17	
Chloromethane	16		1.0	ug/L	20.0	0.050 U	82	56-171	1	28	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I17036 - EPA 5030B_MS - Continued

Matrix Spike Dup (5I17036-MSD1) Continued

Prepared: 09/17/2015 13:48 Analyzed: 09/18/2015 13:02

Source: C512032-05

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	15		1.0	ug/L	20.0	0.075 U	75	69-120	0.5	18	
cis-1,3-Dichloropropene	16		1.0	ug/L	20.0	0.073 U	82	63-125	2	17	
Dibromochloromethane	18		1.0	ug/L	20.0	0.067 U	90	73-117	1	16	
Dibromomethane	17		1.0	ug/L	20.0	0.13 U	83	76-124	0.2	15	
Dichlorodifluoromethane	12		1.0	ug/L	20.0	0.091 U	60	25-161	5	48	
Ethylbenzene	16		1.0	ug/L	20.0	0.10 U	82	68-124	5	16	
Freon 113	33		1.0	ug/L	40.0	0.35 U	82	0-200	5	25	
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.15 U	87	63-114	5	19	
Isopropyl Ether	16		1.0	ug/L	20.0	0.21 U	81	70-130	3	30	
Isopropylbenzene	17		1.0	ug/L	20.0	0.13 U	86	81-136	5	16	
m,p-Xylenes	34		2.0	ug/L	40.0	0.18 U	85	79-121	5	16	
Methylene Chloride	18		2.0	ug/L	20.0	0.070 U	92	68-128	1	17	
Methyl-tert-Butyl Ether	15		1.0	ug/L	20.0	0.12 U	75	10-127	0.3	21	
Naphthalene	18		1.0	ug/L	20.0	0.62	88	50-127	11	19	
n-Butyl Benzene	16		1.0	ug/L	20.0	0.074 U	80	68-126	1	15	
n-Propyl Benzene	18		1.0	ug/L	20.0	0.073 U	90	76-125	3	16	
o-Xylene	17		1.0	ug/L	20.0	0.088 U	86	71-125	5	15	
sec-Butylbenzene	17		1.0	ug/L	20.0	0.053 U	86	75-122	3	17	
Styrene	17		1.0	ug/L	20.0	0.082 U	85	73-120	4	23	
tert-Butylbenzene	17		1.0	ug/L	20.0	0.094 U	84	70-137	0.06	22	
Tetrachloroethene	26		1.0	ug/L	20.0	0.099 U	132	40-181	10	26	
Toluene	17		1.0	ug/L	20.0	0.053 U	83	71-118	3	17	
trans-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.11 U	84	75-139	3	19	
trans-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.080 U	88	62-152	0	16	
Trichloroethene	17		1.0	ug/L	20.0	0.13 U	84	75-115	7	18	
Trichlorofluoromethane	17		1.0	ug/L	20.0	0.15 U	85	68-183	0.3	22	
Vinyl chloride	17		1.0	ug/L	20.0	0.083 U	84	49-150	1	27	
Xylenes (Total)	51		1.0	ug/L	60.0	0.22 U	85	77-121	5	16	
4-Bromofluorobenzene	54			ug/L	50.0		109	70-130			
Dibromofluoromethane	50			ug/L	50.0		99	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

Batch 5I21013 - EPA 5030B_MS

Blank (5I21013-BLK1)

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 11:26

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I21013 - EPA 5030B_MS - Continued

Blank (5I21013-BLK1) Continued

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 11:26

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I21013 - EPA 5030B_MS - Continued

Blank (5I21013-BLK1) Continued

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 11:26

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	51			ug/L	50.0		102	70-130			
Toluene-d8	51			ug/L	50.0		103	70-130			

LCS (5I21013-BS1)

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 11:56

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0		94	70-130			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0		89	70-130			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0		87	70-130			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0		93	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		95	70-130			
1,1-Dichloroethene	17		1.0	ug/L	20.0		87	70-130			
1,1-Dichloropropene	18		1.0	ug/L	20.0		91	70-130			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0		87	70-130			
1,2,3-Trichloropropane	17		1.0	ug/L	20.0		87	70-130			
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0		82	70-130			
1,2,4-Trimethylbenzene	19		1.0	ug/L	20.0		95	70-130			
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0		82	70-130			
1,2-Dibromoethane	19		1.0	ug/L	20.0		93	70-130			
1,2-Dichlorobenzene	19		1.0	ug/L	20.0		95	70-130			
1,2-Dichloroethane	21		1.0	ug/L	20.0		103	70-130			
1,2-Dichloropropane	19		1.0	ug/L	20.0		94	70-130			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0		91	70-130			
1,3-Dichlorobenzene	19		1.0	ug/L	20.0		96	70-130			
1,3-Dichloropropane	18		1.0	ug/L	20.0		89	70-130			
1,4-Dichlorobenzene	20		1.0	ug/L	20.0		99	70-130			
2,2-Dichloropropane	19		1.0	ug/L	20.0		94	70-130			
2-Chlorotoluene	19		1.0	ug/L	20.0		96	70-130			
4-Chlorotoluene	19		1.0	ug/L	20.0		94	70-130			
4-Isopropyltoluene	17		1.0	ug/L	20.0		87	70-130			
Benzene	17		1.0	ug/L	20.0		87	70-130			
Bromobenzene	17		1.0	ug/L	20.0		86	70-130			
Bromochloromethane	18		1.0	ug/L	20.0		89	70-130			
Bromodichloromethane	19		1.0	ug/L	20.0		94	70-130			
Bromoform	18		1.0	ug/L	20.0		91	70-130			
Bromomethane	16		1.0	ug/L	20.0		82	60-140			
Carbon Tetrachloride	18		1.0	ug/L	20.0		90	70-130			
Chlorobenzene	19		1.0	ug/L	20.0		97	70-130			
Chloroethane	23		1.0	ug/L	20.0		113	60-140			
Chloroform	18		1.0	ug/L	20.0		88	70-130			
Chloromethane	19		1.0	ug/L	20.0		94	60-140			
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0		85	70-130			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0		92	70-130			
Dibromochloromethane	19		1.0	ug/L	20.0		97	70-130			
Dibromomethane	18		1.0	ug/L	20.0		90	70-130			
Dichlorodifluoromethane	18		1.0	ug/L	20.0		89	60-140			

FINAL

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I21013 - EPA 5030B_MS - Continued

LCS (5I21013-BS1) Continued

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 11:56

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Ethylbenzene	18		1.0	ug/L	20.0		89	70-130			
Freon 113	35		1.0	ug/L	40.0		86	70-130			
Hexachlorobutadiene	18		1.0	ug/L	20.0		91	70-130			
Isopropyl Ether	17		1.0	ug/L	20.0		86	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0		91	70-130			
m,p-Xylenes	38		2.0	ug/L	40.0		94	70-130			
Methylene Chloride	19		2.0	ug/L	20.0		95	70-130			
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0		80	70-130			
Naphthalene	18		1.0	ug/L	20.0		92	70-130			
n-Butyl Benzene	17		1.0	ug/L	20.0		87	70-130			
n-Propyl Benzene	19		1.0	ug/L	20.0		93	70-130			
o-Xylene	19		1.0	ug/L	20.0		95	70-130			
sec-Butylbenzene	18		1.0	ug/L	20.0		91	70-130			
Styrene	18		1.0	ug/L	20.0		91	70-130			
tert-Butylbenzene	18		1.0	ug/L	20.0		89	70-130			
Tetrachloroethene	19		1.0	ug/L	20.0		95	70-130			
Toluene	18		1.0	ug/L	20.0		91	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		96	70-130			
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0		102	70-130			
Trichloroethene	18		1.0	ug/L	20.0		90	70-130			
Trichlorofluoromethane	19		1.0	ug/L	20.0		95	60-140			
Vinyl chloride	19		1.0	ug/L	20.0		95	60-140			
Xylenes (Total)	57		1.0	ug/L	60.0		94	70-130			
4-Bromofluorobenzene	54			ug/L	50.0		108	70-130			
Dibromofluoromethane	51			ug/L	50.0		101	70-130			
Toluene-d8	52			ug/L	50.0		103	70-130			

Matrix Spike (5I21013-MS1)

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 12:25

Source: C512157-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.091 U	94	71-117			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0	0.15 U	90	72-143			
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.085 U	87	59-133			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	94	67-118			
1,1-Dichloroethane	20		1.0	ug/L	20.0	0.050 U	99	79-141			
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	88	75-133			
1,1-Dichloropropene	18		1.0	ug/L	20.0	0.063 U	90	70-129			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.44	85	62-117			
1,2,3-Trichloropropane	16		1.0	ug/L	20.0	0.15 U	80	58-140			
1,2,4-Trichlorobenzene	18		1.0	ug/L	20.0	0.097 U	88	59-122			
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	90	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	86	37-157			
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	98	66-123			
1,2-Dichlorobenzene	18		1.0	ug/L	20.0	0.052 U	89	76-116			
1,2-Dichloroethane	21		1.0	ug/L	20.0	0.082 U	105	72-151			
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	88	78-125			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	92	77-129			
1,3-Dichlorobenzene	19		1.0	ug/L	20.0	0.092 U	97	76-119			
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	89	60-129			

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This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I21013 - EPA 5030B_MS - Continued

Matrix Spike (5I21013-MS1) Continued

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 12:25

Source: C512157-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	94	76-122			
2,2-Dichloropropane	19		1.0	ug/L	20.0	0.12 U	94	21-167			
2-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	92	73-135			
4-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	93	76-134			
4-Isopropyltoluene	17		1.0	ug/L	20.0	0.066 U	83	75-127			
Benzene	18		1.0	ug/L	20.0	0.050 U	91	81-134			
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	89	72-115			
Bromochloromethane	18		1.0	ug/L	20.0	0.11 U	88	74-128			
Bromodichloromethane	18		1.0	ug/L	20.0	0.10 U	90	72-129			
Bromoform	19		1.0	ug/L	20.0	0.20 U	94	73-119			
Bromomethane	16		1.0	ug/L	20.0	0.28 U	82	38-189			
Carbon Tetrachloride	18		1.0	ug/L	20.0	0.082 U	91	68-142			
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	92	83-117			
Chloroethane	22		1.0	ug/L	20.0	0.18 U	109	45-213			
Chloroform	17		1.0	ug/L	20.0	0.083 U	87	78-138			
Chloromethane	18		1.0	ug/L	20.0	0.050 U	92	56-171			
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.075 U	86	69-120			
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0	0.073 U	95	63-125			
Dibromochloromethane	20		1.0	ug/L	20.0	0.067 U	98	73-117			
Dibromomethane	19		1.0	ug/L	20.0	0.13 U	93	76-124			
Dichlorodifluoromethane	16		1.0	ug/L	20.0	0.091 U	82	25-161			
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	91	68-124			
Freon 113	35		1.0	ug/L	40.0	0.35 U	87	0-200			
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.15 U	89	63-114			
Isopropyl Ether	17		1.0	ug/L	20.0	0.21 U	86	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	90	81-136			
m,p-Xylenes	38		2.0	ug/L	40.0	0.18 U	95	79-121			
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	93	68-128			
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0	0.12 U	81	10-127			
Naphthalene	18		1.0	ug/L	20.0	0.41	87	50-127			
n-Butyl Benzene	17		1.0	ug/L	20.0	0.074 U	87	68-126			
n-Propyl Benzene	20		1.0	ug/L	20.0	0.073 U	98	76-125			
o-Xylene	19		1.0	ug/L	20.0	0.088 U	96	71-125			
sec-Butylbenzene	17		1.0	ug/L	20.0	0.053 U	86	75-122			
Styrene	19		1.0	ug/L	20.0	0.082 U	94	73-120			
tert-Butylbenzene	17		1.0	ug/L	20.0	0.094 U	86	70-137			
Tetrachloroethene	20		1.0	ug/L	20.0	0.099 U	99	40-181			
Toluene	19		1.0	ug/L	20.0	0.053 U	94	71-118			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	94	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	104	62-152			
Trichloroethene	19		1.0	ug/L	20.0	0.13 U	93	75-115			
Trichlorofluoromethane	19		1.0	ug/L	20.0	0.15 U	95	68-183			
Vinyl chloride	19		1.0	ug/L	20.0	0.083 U	95	49-150			
Xylenes (Total)	57		1.0	ug/L	60.0	0.22 U	96	77-121			
4-Bromofluorobenzene	54			ug/L	50.0		109	70-130			
Dibromofluoromethane	52			ug/L	50.0		104	70-130			
Toluene-d8	52			ug/L	50.0		105	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5121013 - EPA 5030B_MS - Continued

Matrix Spike Dup (5121013-MSD1)

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 12:55

Source: C512157-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	99	71-117	5	16	
1,1,1-Trichloroethane	16		1.0	ug/L	20.0	0.15 U	82	72-143	9	18	
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	89	59-133	2	16	
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	94	67-118	0.1	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	96	79-141	2	19	
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	90	75-133	2	20	
1,1-Dichloropropene	18		1.0	ug/L	20.0	0.063 U	91	70-129	0.5	17	
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.44	84	62-117	1	17	
1,2,3-Trichloropropane	17		1.0	ug/L	20.0	0.15 U	84	58-140	5	17	
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.097 U	85	59-122	4	17	
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	91	74-123	2	18	
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0	0.48 U	80	37-157	7	18	
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	95	66-123	3	15	
1,2-Dichlorobenzene	18		1.0	ug/L	20.0	0.052 U	90	76-116	0.9	16	
1,2-Dichloroethane	20		1.0	ug/L	20.0	0.082 U	100	72-151	5	16	
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	90	78-125	2	19	
1,3,5-Trimethylbenzene	17		1.0	ug/L	20.0	0.10 U	87	77-129	5	16	
1,3-Dichlorobenzene	18		1.0	ug/L	20.0	0.092 U	92	76-119	5	17	
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	93	60-129	4	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	91	76-122	3	16	
2,2-Dichloropropane	19		1.0	ug/L	20.0	0.12 U	94	21-167	0.1	20	
2-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	92	73-135	0.4	16	
4-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	90	76-134	4	16	
4-Isopropyltoluene	16		1.0	ug/L	20.0	0.066 U	81	75-127	3	17	
Benzene	17		1.0	ug/L	20.0	0.050 U	86	81-134	6	17	
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	90	72-115	0.8	17	
Bromochloromethane	17		1.0	ug/L	20.0	0.11 U	87	74-128	1	18	
Bromodichloromethane	18		1.0	ug/L	20.0	0.10 U	91	72-129	0.7	16	
Bromoform	18		1.0	ug/L	20.0	0.20 U	89	73-119	5	44	
Bromomethane	18		1.0	ug/L	20.0	0.28 U	88	38-189	7	27	
Carbon Tetrachloride	17		1.0	ug/L	20.0	0.082 U	87	68-142	4	17	
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	92	83-117	0.05	16	
Chloroethane	23		1.0	ug/L	20.0	0.18 U	114	45-213	5	26	
Chloroform	18		1.0	ug/L	20.0	0.083 U	89	78-138	2	17	
Chloromethane	18		1.0	ug/L	20.0	0.050 U	90	56-171	3	28	
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.075 U	86	69-120	0.5	18	
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	91	63-125	4	17	
Dibromochloromethane	20		1.0	ug/L	20.0	0.067 U	98	73-117	0.2	16	
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	89	76-124	4	15	
Dichlorodifluoromethane	16		1.0	ug/L	20.0	0.091 U	79	25-161	5	48	
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	90	68-124	0.5	16	
Freon 113	34		1.0	ug/L	40.0	0.35 U	86	0-200	1	25	
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.15 U	86	63-114	4	19	
Isopropyl Ether	17		1.0	ug/L	20.0	0.21 U	85	70-130	0.4	30	
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	89	81-136	2	16	
m,p-Xylenes	37		2.0	ug/L	40.0	0.18 U	93	79-121	2	16	
Methylene Chloride	20		2.0	ug/L	20.0	0.070 U	100	68-128	8	17	
Methyl-tert-Butyl Ether	17		1.0	ug/L	20.0	0.12 U	84	10-127	3	21	
Naphthalene	18		1.0	ug/L	20.0	0.41	87	50-127	0.4	19	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I21013 - EPA 5030B_MS - Continued

Matrix Spike Dup (5I21013-MSD1) Continued

Prepared: 09/21/2015 09:19 Analyzed: 09/21/2015 12:55

Source: C512157-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	17		1.0	ug/L	20.0	0.074 U	84	68-126	4	15	
n-Propyl Benzene	19		1.0	ug/L	20.0	0.073 U	93	76-125	5	16	
o-Xylene	19		1.0	ug/L	20.0	0.088 U	94	71-125	1	15	
sec-Butylbenzene	17		1.0	ug/L	20.0	0.053 U	87	75-122	0.8	17	
Styrene	18		1.0	ug/L	20.0	0.082 U	90	73-120	5	23	
tert-Butylbenzene	16		1.0	ug/L	20.0	0.094 U	82	70-137	5	22	
Tetrachloroethene	19		1.0	ug/L	20.0	0.099 U	96	40-181	3	26	
Toluene	18		1.0	ug/L	20.0	0.053 U	92	71-118	2	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	94	75-139	1	19	
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.080 U	99	62-152	5	16	
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	89	75-115	4	18	
Trichlorofluoromethane	19		1.0	ug/L	20.0	0.15 U	93	68-183	2	22	
Vinyl chloride	18		1.0	ug/L	20.0	0.083 U	90	49-150	5	27	
Xylenes (Total)	56		1.0	ug/L	60.0	0.22 U	94	77-121	2	16	
4-Bromofluorobenzene	54			ug/L	50.0		109	70-130			
Dibromofluoromethane	53			ug/L	50.0		105	70-130			
Toluene-d8	51			ug/L	50.0		102	70-130			

Batch 5I22019 - EPA 5030B_MS

Blank (5I22019-BLK1)

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 22:02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I22019 - EPA 5030B_MS - Continued

Blank (5I22019-BLK1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 22:02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
4-Bromofluorobenzene	53			ug/L	50.0		106	70-130			
Dibromofluoromethane	49			ug/L	50.0		97	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

LCS (5I22019-BS1)

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 14:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	18		1.0	ug/L	20.0		92	70-130			
1,1,1-Trichloroethane	17		1.0	ug/L	20.0		87	70-130			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0		90	70-130			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0		93	70-130			
1,1-Dichloroethane	19		1.0	ug/L	20.0		97	70-130			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I22019 - EPA 5030B_MS - Continued

LCS (5I22019-BS1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 14:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	18		1.0	ug/L	20.0		88	70-130			
1,1-Dichloropropene	18		1.0	ug/L	20.0		90	70-130			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0		84	70-130			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0		90	70-130			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0		86	70-130			
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0		90	70-130			
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0		82	70-130			
1,2-Dibromoethane	18		1.0	ug/L	20.0		88	70-130			
1,2-Dichlorobenzene	18		1.0	ug/L	20.0		92	70-130			
1,2-Dichloroethane	21		1.0	ug/L	20.0		103	70-130			
1,2-Dichloropropane	18		1.0	ug/L	20.0		91	70-130			
1,3,5-Trimethylbenzene	17		1.0	ug/L	20.0		87	70-130			
1,3-Dichlorobenzene	18		1.0	ug/L	20.0		92	70-130			
1,3-Dichloropropane	18		1.0	ug/L	20.0		90	70-130			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0		94	70-130			
2,2-Dichloropropane	19		1.0	ug/L	20.0		93	70-130			
2-Chlorotoluene	19		1.0	ug/L	20.0		94	70-130			
4-Chlorotoluene	19		1.0	ug/L	20.0		93	70-130			
4-Isopropyltoluene	16		1.0	ug/L	20.0		81	70-130			
Benzene	18		1.0	ug/L	20.0		88	70-130			
Bromobenzene	18		1.0	ug/L	20.0		91	70-130			
Bromochloromethane	18		1.0	ug/L	20.0		88	70-130			
Bromodichloromethane	19		1.0	ug/L	20.0		93	70-130			
Bromoform	17		1.0	ug/L	20.0		83	70-130			
Bromomethane	24		1.0	ug/L	20.0		122	60-140			
Carbon Tetrachloride	17		1.0	ug/L	20.0		86	70-130			
Chlorobenzene	18		1.0	ug/L	20.0		92	70-130			
Chloroethane	26		1.0	ug/L	20.0		129	60-140			
Chloroform	17		1.0	ug/L	20.0		85	70-130			
Chloromethane	17		1.0	ug/L	20.0		87	60-140			
cis-1,2-Dichloroethene	16		1.0	ug/L	20.0		82	70-130			
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0		96	70-130			
Dibromochloromethane	19		1.0	ug/L	20.0		95	70-130			
Dibromomethane	18		1.0	ug/L	20.0		90	70-130			
Dichlorodifluoromethane	16		1.0	ug/L	20.0		81	60-140			
Ethylbenzene	18		1.0	ug/L	20.0		89	70-130			
Freon 113	33		1.0	ug/L	40.0		83	70-130			
Hexachlorobutadiene	17		1.0	ug/L	20.0		87	70-130			
Isopropyl Ether	17		1.0	ug/L	20.0		86	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0		90	70-130			
m,p-Xylenes	37		2.0	ug/L	40.0		93	70-130			
Methylene Chloride	20		2.0	ug/L	20.0		99	70-130			
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0		78	70-130			
Naphthalene	18		1.0	ug/L	20.0		89	70-130			
n-Butyl Benzene	17		1.0	ug/L	20.0		83	70-130			
n-Propyl Benzene	19		1.0	ug/L	20.0		93	70-130			
o-Xylene	19		1.0	ug/L	20.0		95	70-130			
sec-Butylbenzene	17		1.0	ug/L	20.0		84	70-130			
Styrene	18		1.0	ug/L	20.0		90	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I22019 - EPA 5030B_MS - Continued

LCS (5I22019-BS1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 14:11

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tert-Butylbenzene	17		1.0	ug/L	20.0		84	70-130			
Tetrachloroethene	19		1.0	ug/L	20.0		96	70-130			
Toluene	18		1.0	ug/L	20.0		91	70-130			
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0		89	70-130			
trans-1,3-Dichloropropene	20		1.0	ug/L	20.0		102	70-130			
Trichloroethene	19		1.0	ug/L	20.0		93	70-130			
Trichlorofluoromethane	19		1.0	ug/L	20.0		95	60-140			
Vinyl chloride	18		1.0	ug/L	20.0		92	60-140			
Xylenes (Total)	56		1.0	ug/L	60.0		93	70-130			
4-Bromofluorobenzene	55			ug/L	50.0		110	70-130			
Dibromofluoromethane	52			ug/L	50.0		103	70-130			
Toluene-d8	52			ug/L	50.0		105	70-130			

Matrix Spike (5I22019-MS1)

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 14:41

Source: C512157-07

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.091 U	93	71-117			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0	0.15 U	92	72-143			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	91	59-133			
1,1,2-Trichloroethane	18		1.0	ug/L	20.0	0.068 U	90	67-118			
1,1-Dichloroethane	20		1.0	ug/L	20.0	0.050 U	100	79-141			
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.15 U	92	75-133			
1,1-Dichloropropene	18		1.0	ug/L	20.0	0.063 U	88	70-129			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.48	82	62-117			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0	0.15 U	89	58-140			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0	0.52	81	59-122			
1,2,4-Trimethylbenzene	18		1.0	ug/L	20.0	0.067 U	91	74-123			
1,2-Dibromo-3-chloropropane	19		1.0	ug/L	20.0	0.48 U	96	37-157			
1,2-Dibromoethane	18		1.0	ug/L	20.0	0.42 U	90	66-123			
1,2-Dichlorobenzene	18		1.0	ug/L	20.0	0.052 U	89	76-116			
1,2-Dichloroethane	19		1.0	ug/L	20.0	0.082 U	96	72-151			
1,2-Dichloropropane	19		1.0	ug/L	20.0	0.098 U	95	78-125			
1,3,5-Trimethylbenzene	18		1.0	ug/L	20.0	0.10 U	88	77-129			
1,3-Dichlorobenzene	19		1.0	ug/L	20.0	0.092 U	93	76-119			
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	92	60-129			
1,4-Dichlorobenzene	19		1.0	ug/L	20.0	0.10 U	95	76-122			
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	98	21-167			
2-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	92	73-135			
4-Chlorotoluene	19		1.0	ug/L	20.0	0.10 U	93	76-134			
4-Isopropyltoluene	17		1.0	ug/L	20.0	0.066 U	84	75-127			
Benzene	18		1.0	ug/L	20.0	0.050 U	88	81-134			
Bromobenzene	18		1.0	ug/L	20.0	0.13 U	89	72-115			
Bromochloromethane	19		1.0	ug/L	20.0	0.11 U	95	74-128			
Bromodichloromethane	19		1.0	ug/L	20.0	0.10 U	96	72-129			
Bromoform	18		1.0	ug/L	20.0	0.20 U	89	73-119			
Bromomethane	25		1.0	ug/L	20.0	0.28 U	124	38-189			
Carbon Tetrachloride	17		1.0	ug/L	20.0	0.082 U	87	68-142			
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	92	83-117			
Chloroethane	27		1.0	ug/L	20.0	0.18 U	134	45-213			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5122019 - EPA 5030B_MS - Continued

Matrix Spike (5122019-MS1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 14:41

Source: C512157-07

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroform	18		1.0	ug/L	20.0	0.083 U	92	78-138			
Chloromethane	19		1.0	ug/L	20.0	0.050 U	94	56-171			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.075 U	88	69-120			
cis-1,3-Dichloropropene	19		1.0	ug/L	20.0	0.073 U	94	63-125			
Dibromochloromethane	18		1.0	ug/L	20.0	0.067 U	92	73-117			
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	92	76-124			
Dichlorodifluoromethane	17		1.0	ug/L	20.0	0.091 U	85	25-161			
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	89	68-124			
Freon 113	35		1.0	ug/L	40.0	0.35 U	87	0-200			
Hexachlorobutadiene	18		1.0	ug/L	20.0	1.6	81	63-114			
Isopropyl Ether	18		1.0	ug/L	20.0	0.21 U	90	70-130			
Isopropylbenzene	18		1.0	ug/L	20.0	0.13 U	90	81-136			
m,p-Xylenes	37		2.0	ug/L	40.0	0.18 U	92	79-121			
Methylene Chloride	20		2.0	ug/L	20.0	0.070 U	102	68-128			
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0	0.12 U	80	10-127			
Naphthalene	18		1.0	ug/L	20.0	0.086 U	88	50-127			
n-Butyl Benzene	17		1.0	ug/L	20.0	0.59	83	68-126			
n-Propyl Benzene	19		1.0	ug/L	20.0	0.073 U	93	76-125			
o-Xylene	19		1.0	ug/L	20.0	0.088 U	94	71-125			
sec-Butylbenzene	17		1.0	ug/L	20.0	0.053 U	83	75-122			
Styrene	18		1.0	ug/L	20.0	0.082 U	90	73-120			
tert-Butylbenzene	16		1.0	ug/L	20.0	0.094 U	82	70-137			
Tetrachloroethene	21		1.0	ug/L	20.0	0.099 U	104	40-181			
Toluene	18		1.0	ug/L	20.0	0.053 U	92	71-118			
trans-1,2-Dichloroethene	20		1.0	ug/L	20.0	0.11 U	99	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	103	62-152			
Trichloroethene	19		1.0	ug/L	20.0	0.13 U	94	75-115			
Trichlorofluoromethane	20		1.0	ug/L	20.0	0.15 U	98	68-183			
Vinyl chloride	19		1.0	ug/L	20.0	0.083 U	96	49-150			
Xylenes (Total)	56		1.0	ug/L	60.0	0.22 U	93	77-121			
4-Bromofluorobenzene	54			ug/L	50.0		108	70-130			
Dibromofluoromethane	52			ug/L	50.0		103	70-130			
Toluene-d8	52			ug/L	50.0		104	70-130			

Matrix Spike Dup (5122019-MSD1)

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 15:11

Source: C512157-07

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.091 U	86	71-117	8	16	
1,1,1-Trichloroethane	17		1.0	ug/L	20.0	0.15 U	86	72-143	6	18	
1,1,2,2-Tetrachloroethane	17		1.0	ug/L	20.0	0.085 U	84	59-133	8	16	
1,1,2-Trichloroethane	17		1.0	ug/L	20.0	0.068 U	86	67-118	5	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	93	79-141	8	19	
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.15 U	86	75-133	7	20	
1,1-Dichloropropene	18		1.0	ug/L	20.0	0.063 U	90	70-129	2	17	
1,2,3-Trichlorobenzene	16		1.0	ug/L	20.0	0.48	76	62-117	7	17	
1,2,3-Trichloropropane	17		1.0	ug/L	20.0	0.15 U	83	58-140	6	17	
1,2,4-Trichlorobenzene	15		1.0	ug/L	20.0	0.52	75	59-122	8	17	
1,2,4-Trimethylbenzene	17		1.0	ug/L	20.0	0.067 U	83	74-123	9	18	
1,2-Dibromo-3-chloropropane	16		1.0	ug/L	20.0	0.48 U	78	37-157	20	18	QR-02

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I22019 - EPA 5030B_MS - Continued

Matrix Spike Dup (5I22019-MSD1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 15:11

Source: C512157-07

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dibromoethane	18		1.0	ug/L	20.0	0.42 U	88	66-123	3	15	
1,2-Dichlorobenzene	17		1.0	ug/L	20.0	0.052 U	85	76-116	5	16	
1,2-Dichloroethane	20		1.0	ug/L	20.0	0.082 U	102	72-151	6	16	
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	87	78-125	9	19	
1,3,5-Trimethylbenzene	17		1.0	ug/L	20.0	0.10 U	83	77-129	5	16	
1,3-Dichlorobenzene	18		1.0	ug/L	20.0	0.092 U	88	76-119	6	17	
1,3-Dichloropropane	17		1.0	ug/L	20.0	0.15 U	83	60-129	10	16	
1,4-Dichlorobenzene	18		1.0	ug/L	20.0	0.10 U	88	76-122	8	16	
2,2-Dichloropropane	18		1.0	ug/L	20.0	0.12 U	88	21-167	11	20	
2-Chlorotoluene	18		1.0	ug/L	20.0	0.10 U	89	73-135	2	16	
4-Chlorotoluene	17		1.0	ug/L	20.0	0.10 U	87	76-134	7	16	
4-Isopropyltoluene	15		1.0	ug/L	20.0	0.066 U	77	75-127	8	17	
Benzene	16		1.0	ug/L	20.0	0.050 U	81	81-134	8	17	
Bromobenzene	17		1.0	ug/L	20.0	0.13 U	86	72-115	3	17	
Bromochloromethane	17		1.0	ug/L	20.0	0.11 U	87	74-128	8	18	
Bromodichloromethane	18		1.0	ug/L	20.0	0.10 U	91	72-129	6	16	
Bromoform	16		1.0	ug/L	20.0	0.20 U	79	73-119	12	44	
Bromomethane	22		1.0	ug/L	20.0	0.28 U	111	38-189	11	27	
Carbon Tetrachloride	18		1.0	ug/L	20.0	0.082 U	88	68-142	2	17	
Chlorobenzene	17		1.0	ug/L	20.0	0.069 U	85	83-117	9	16	
Chloroethane	26		1.0	ug/L	20.0	0.18 U	128	45-213	4	26	
Chloroform	17		1.0	ug/L	20.0	0.083 U	84	78-138	8	17	
Chloromethane	18		1.0	ug/L	20.0	0.050 U	89	56-171	5	28	
cis-1,2-Dichloroethene	15		1.0	ug/L	20.0	0.075 U	77	69-120	13	18	
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	88	63-125	7	17	
Dibromochloromethane	17		1.0	ug/L	20.0	0.067 U	84	73-117	9	16	
Dibromomethane	17		1.0	ug/L	20.0	0.13 U	83	76-124	11	15	
Dichlorodifluoromethane	18		1.0	ug/L	20.0	0.091 U	88	25-161	3	48	
Ethylbenzene	17		1.0	ug/L	20.0	0.10 U	83	68-124	8	16	
Freon 113	38		1.0	ug/L	40.0	0.35 U	94	0-200	7	25	
Hexachlorobutadiene	18		1.0	ug/L	20.0	1.6	82	63-114	1	19	
Isopropyl Ether	17		1.0	ug/L	20.0	0.21 U	85	70-130	5	30	
Isopropylbenzene	17		1.0	ug/L	20.0	0.13 U	84	81-136	8	16	
m,p-Xylenes	35		2.0	ug/L	40.0	0.18 U	87	79-121	6	16	
Methylene Chloride	19		2.0	ug/L	20.0	0.070 U	95	68-128	6	17	
Methyl-tert-Butyl Ether	16		1.0	ug/L	20.0	0.12 U	81	10-127	0.4	21	
Naphthalene	17		1.0	ug/L	20.0	0.086 U	85	50-127	4	19	
n-Butyl Benzene	16		1.0	ug/L	20.0	0.59	76	68-126	8	15	
n-Propyl Benzene	18		1.0	ug/L	20.0	0.073 U	90	76-125	4	16	
o-Xylene	17		1.0	ug/L	20.0	0.088 U	87	71-125	8	15	
sec-Butylbenzene	16		1.0	ug/L	20.0	0.053 U	81	75-122	3	17	
Styrene	17		1.0	ug/L	20.0	0.082 U	84	73-120	7	23	
tert-Butylbenzene	16		1.0	ug/L	20.0	0.094 U	81	70-137	0.9	22	
Tetrachloroethene	19		1.0	ug/L	20.0	0.099 U	94	40-181	11	26	
Toluene	17		1.0	ug/L	20.0	0.053 U	83	71-118	11	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	93	75-139	6	19	
trans-1,3-Dichloropropene	19		1.0	ug/L	20.0	0.080 U	95	62-152	8	16	
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	92	75-115	2	18	
Trichlorofluoromethane	20		1.0	ug/L	20.0	0.15 U	101	68-183	3	22	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5I22019 - EPA 5030B_MS - Continued

Matrix Spike Dup (5I22019-MSD1) Continued

Prepared: 09/22/2015 13:30 Analyzed: 09/22/2015 15:11

Source: C512157-07

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	18		1.0	ug/L	20.0	0.083 U	92	49-150	5	27	
Xylenes (Total)	52		1.0	ug/L	60.0	0.22 U	87	77-121	7	16	
4-Bromofluorobenzene	53			ug/L	50.0		107	70-130			
Dibromofluoromethane	54			ug/L	50.0		107	70-130			
Toluene-d8	52			ug/L	50.0		103	70-130			

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5I16030 - EPA 5030B

Blank (5I16030-BLK1)

Prepared: 09/16/2015 14:02 Analyzed: 09/16/2015 15:39

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	4.7	U	30.0	ug/L							
C9-C10 Aromatics	4.2	U	10	ug/L							
C9-C12 Aliphatics	10.0	U	30.0	ug/L							
2,5-Dibromotoluene (FID)	101			ug/L	100		101	70-130			
2,5-Dibromotoluene (PID)	100			ug/L	100		103	70-130			

LCS (5I16030-BS1)

Prepared: 09/16/2015 14:02 Analyzed: 09/16/2015 16:10

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	113		30.0	ug/L	120		94	70-130			
C9-C10 Aromatics	42		10	ug/L	40.0		105	70-130			
C9-C12 Aliphatics	117		30.0	ug/L	120		97	70-130			
2,5-Dibromotoluene (FID)	101			ug/L	100		101	70-130			
2,5-Dibromotoluene (PID)	100			ug/L	100		100	70-130			

LCS Dup (5I16030-BSD1)

Prepared: 09/16/2015 14:02 Analyzed: 09/16/2015 16:41

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	110		30.0	ug/L	120		92	70-130	3	25	
C9-C10 Aromatics	42		10	ug/L	40.0		105	70-130	0.5	25	
C9-C12 Aliphatics	113		30.0	ug/L	120		94	70-130	3	25	
2,5-Dibromotoluene (FID)	98.6			ug/L	100		99	70-130			
2,5-Dibromotoluene (PID)	100			ug/L	100		101	70-130			

Semivolatile Organic Compounds by GC - Quality Control

Batch 5I14012 - Same SVOA

Blank (5I14012-BLK1)

Prepared: 09/14/2015 10:45 Analyzed: 09/14/2015 11:46

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.031	U	0.10	ug/L							
1,2-Dibromo-3-chloropropane	0.0050	U	0.020	ug/L							
1,2-Dibromoethane	0.0053	U	0.020	ug/L							
1,1,1,2-Tetrachloroethane	0.29			ug/L	0.250		118	70-130			

QUALITY CONTROL DATA

Semivolatile Organic Compounds by GC - Quality Control

Batch 5I14012 - Same SVOA - Continued

LCS (5I14012-BS1)

Prepared: 09/14/2015 10:45 Analyzed: 09/14/2015 12:03

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.28		0.10	ug/L	0.250		113	70-130			
1,2-Dibromo-3-chloropropane	0.26		0.020	ug/L	0.250		104	70-130			
1,2-Dibromoethane	0.29		0.020	ug/L	0.250		114	70-130			
1,1,1,2-Tetrachloroethane	0.29			ug/L	0.250		115	70-130			

LCS Dup (5I14012-BSD1)

Prepared: 09/14/2015 10:45 Analyzed: 09/14/2015 12:20

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.29		0.10	ug/L	0.250		114	70-130	1	18	
1,2-Dibromo-3-chloropropane	0.27		0.020	ug/L	0.250		107	70-130	3	20	
1,2-Dibromoethane	0.29		0.020	ug/L	0.250		115	70-130	0.8	18	
1,1,1,2-Tetrachloroethane	0.28			ug/L	0.250		114	70-130			

Matrix Spike (5I14012-MS1)

Prepared: 09/14/2015 10:45 Analyzed: 09/14/2015 12:37

Source: C511760-10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.32		0.10	ug/L	0.250	0.031 U	129	65-135			
1,2-Dibromo-3-chloropropane	0.28		0.020	ug/L	0.250	0.0050 U	113	65-135			
1,2-Dibromoethane	0.31		0.020	ug/L	0.250	0.0053 U	123	65-135			
1,1,1,2-Tetrachloroethane	0.31			ug/L	0.250		123	70-130			

Matrix Spike Dup (5I14012-MSD1)

Prepared: 09/14/2015 10:45 Analyzed: 09/14/2015 12:55

Source: C511760-10

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,3-Trichloropropane	0.29		0.10	ug/L	0.250	0.031 U	117	65-135	10	18	
1,2-Dibromo-3-chloropropane	0.27		0.020	ug/L	0.250	0.0050 U	108	65-135	4	20	
1,2-Dibromoethane	0.30		0.020	ug/L	0.250	0.0053 U	119	65-135	3	18	
1,1,1,2-Tetrachloroethane	0.29			ug/L	0.250		117	70-130			

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5I15013 - EPA 3005A

Blank (5I15013-BLK1)

Prepared: 09/15/2015 10:05 Analyzed: 09/17/2015 11:33

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	3.10	U	10.0	ug/L							

LCS (5I15013-BS1)

Prepared: 09/15/2015 10:05 Analyzed: 09/17/2015 11:45

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	188		10.0	ug/L	200		94	80-120			

Matrix Spike (5I15013-MS1)

Prepared: 09/15/2015 10:05 Analyzed: 09/17/2015 11:51

Source: C511851-02

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	193		10.0	ug/L	200	3.10 U	97	75-125			

QUALITY CONTROL DATA

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5I15013 - EPA 3005A - Continued

Matrix Spike Dup (5I15013-MSD1)

Prepared: 09/15/2015 10:05 Analyzed: 09/17/2015 11:53

Source: C511851-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	192		10.0	ug/L	200	3.10 U	96	75-125	0.9	20	

Post Spike (5I15013-PS1)

Prepared: 09/15/2015 10:05 Analyzed: 09/17/2015 11:56

Source: C511851-02

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.187		0.0100	mg/L	0.200	-0.000549	93	80-120			

FLAGS/NOTES AND DEFINITIONS

- B** The analyte was detected in the associated method blank.
- D** The sample was analyzed at dilution.
- J** The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
- U** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- E** The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
- MRL** Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
- ND** The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- N** The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
- P** Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
- QR-02** The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

Sample Preservation Verification

ENCO Cary



Work Order: C511848
Client: East Coast Environmental (EA030)
Logged In: 11-Sep-15 13:36

Project: Grocery Bag
Project #: [none]
Logged By: Andrew S Coons

C511848-01

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511848-02

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

C511848-03

Cont	Type	Pres (pH) Requirement	pH Checked / In Control	pH Adjusted	Date/Time Adjusted	Reagent Used/Comments
A	250mLP+HNO3	<2	Y / N / NA	Y / N / NA		

	Reagent Name	ID
1		
2		

	Reagent Name	ID
3		
4		

	Reagent Name	ID
5		
6		



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515

Friday, November 6, 2015

East Coast Environmental (EA030)

Attn: Tom Will

3815 Junction Blvd.

Raleigh, NC 27603

RE: Laboratory Results for

Project Number: [none], Project Name/Desc: Grocery Bag

ENCO Workorder(s): C513630

Dear Tom Will,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, October 23, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Bill Scott

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: S-1	Lab ID: C513630-01	Sampled: 10/22/15 09:30	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 12:39
Client ID: S-1	Lab ID: C513630-01RE1	Sampled: 10/22/15 09:30	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 17:48
Client ID: S-1	Lab ID: C513630-01RE3	Sampled: 10/22/15 09:30	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
MAVPH	11/19/15	10/26/15 10:07	10/27/15 16:03
Client ID: S-2	Lab ID: C513630-02	Sampled: 10/22/15 09:45	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 13:07
MAVPH	11/19/15	10/26/15 10:07	10/26/15 19:31
Client ID: S-2	Lab ID: C513630-02RE1	Sampled: 10/22/15 09:45	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 17:20
Client ID: S-2	Lab ID: C513630-02RE2	Sampled: 10/22/15 09:45	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/04/15 12:00	11/04/15 13:07
Client ID: S-3	Lab ID: C513630-03	Sampled: 10/22/15 10:05	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 14:03
Client ID: S-3	Lab ID: C513630-03RE1	Sampled: 10/22/15 10:05	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 18:44
MAVPH	11/19/15	10/26/15 10:07	10/27/15 12:37
Client ID: S-4	Lab ID: C513630-04	Sampled: 10/22/15 10:20	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 14:31
MAVPH	11/19/15	10/26/15 10:07	10/26/15 20:32
Client ID: S-4	Lab ID: C513630-04RE2	Sampled: 10/22/15 10:20	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/04/15 12:00	11/04/15 13:35
Client ID: S-5	Lab ID: C513630-05	Sampled: 10/22/15 10:30	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 14:59
MAVPH	11/19/15	10/26/15 10:07	10/26/15 21:03
Client ID: S-6	Lab ID: C513630-06	Sampled: 10/22/15 10:50	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 13:35
Client ID: S-6	Lab ID: C513630-06RE1	Sampled: 10/22/15 10:50	Received: 10/23/15 10:50
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 8260B	11/05/15	11/03/15 00:00	11/03/15 18:16
MAVPH	11/19/15	10/26/15 10:07	10/27/15 13:07

SAMPLE DETECTION SUMMARY

Client ID: S-1		Lab ID: C513630-01					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Benzene	14000	D	71	180	ug/kg dry	EPA 8260B	
Isopropylbenzene	10000	D	96	180	ug/kg dry	EPA 8260B	
sec-Butylbenzene	6400	D	120	180	ug/kg dry	EPA 8260B	
Client ID: S-1		Lab ID: C513630-01RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	410000	D	3000	4400	ug/kg dry	EPA 8260B	
1,3,5-Trimethylbenzene	120000	D	2600	4400	ug/kg dry	EPA 8260B	
4-Isopropyltoluene	20000	D	3400	4400	ug/kg dry	EPA 8260B	
Ethylbenzene	100000	D	2500	4400	ug/kg dry	EPA 8260B	
m,p-Xylenes	560000	D	4400	8900	ug/kg dry	EPA 8260B	
Naphthalene	68000	D	2500	4400	ug/kg dry	EPA 8260B	
n-Butyl Benzene	29000	D	4000	4400	ug/kg dry	EPA 8260B	
n-Propyl Benzene	53000	D	2800	4400	ug/kg dry	EPA 8260B	
o-Xylene	240000	D	2300	4400	ug/kg dry	EPA 8260B	
Toluene	220000	D	2000	4400	ug/kg dry	EPA 8260B	
Xylenes (Total)	800000	D	4400	8900	ug/kg dry	EPA 8260B	
Client ID: S-1		Lab ID: C513630-01RE3					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C5-C8 Aliphatics	125	D	8.16	52.1	mg/kg dry	MAVPH	
C9-C10 Aromatics	599	D	5.21	17.4	mg/kg dry	MAVPH	
C9-C12 Aliphatics	374	D	26.0	52.1	mg/kg dry	MAVPH	
Client ID: S-2		Lab ID: C513630-02RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Isopropyl Ether	0.3	J	0.3	0.9	ug/kg dry	EPA 8260B	
Client ID: S-2		Lab ID: C513630-02RE2					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	1.3		0.6	0.9	ug/kg dry	EPA 8260B	
1,3,5-Trimethylbenzene	0.6	J	0.5	0.9	ug/kg dry	EPA 8260B	
2-Butanone	9.3		1.8	4.5	ug/kg dry	EPA 8260B	
Acetone	92		3.4	4.5	ug/kg dry	EPA 8260B	
Benzene	49		0.4	0.9	ug/kg dry	EPA 8260B	
Carbon disulfide	1.9	J	1.9	4.5	ug/kg dry	EPA 8260B	
Ethylbenzene	3.0		0.5	0.9	ug/kg dry	EPA 8260B	
m,p-Xylenes	12		0.9	1.8	ug/kg dry	EPA 8260B	
Methyl-tert-Butyl Ether	18		0.2	0.9	ug/kg dry	EPA 8260B	
o-Xylene	4.9		0.5	0.9	ug/kg dry	EPA 8260B	
Toluene	4.8		0.4	0.9	ug/kg dry	EPA 8260B	
Xylenes (Total)	17		0.9	1.8	ug/kg dry	EPA 8260B	
Client ID: S-3		Lab ID: C513630-03					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
4-Isopropyltoluene	68		0.7	0.9	ug/kg dry	EPA 8260B	
sec-Butylbenzene	69		0.6	0.9	ug/kg dry	EPA 8260B	
Toluene	86		0.4	0.9	ug/kg dry	EPA 8260B	

SAMPLE DETECTION SUMMARY

Client ID: S-3

Lab ID: C513630-03RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	16000	D	120	170	ug/kg dry	EPA 8260B	
1,3,5-Trimethylbenzene	4800	D	100	170	ug/kg dry	EPA 8260B	
Acetone	2100	D	660	870	ug/kg dry	EPA 8260B	
Benzene	340	D	69	170	ug/kg dry	EPA 8260B	
C5-C8 Aliphatics	23.5	D	0.846	5.40	mg/kg dry	MAVPH	
C9-C10 Aromatics	56.6	D	0.540	1.80	mg/kg dry	MAVPH	
C9-C12 Aliphatics	43.2	D	2.70	5.40	mg/kg dry	MAVPH	
Ethylbenzene	2000	D	97	170	ug/kg dry	EPA 8260B	
Isopropylbenzene	390	D	94	170	ug/kg dry	EPA 8260B	
m,p-Xylenes	29000	D	170	350	ug/kg dry	EPA 8260B	
Naphthalene	2000	D	99	170	ug/kg dry	EPA 8260B	
n-Propyl Benzene	1100	D	110	170	ug/kg dry	EPA 8260B	
o-Xylene	1800	D	90	170	ug/kg dry	EPA 8260B	
Xylenes (Total)	31000	D	170	350	ug/kg dry	EPA 8260B	

Client ID: S-4

Lab ID: C513630-04

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
C5-C8 Aliphatics	5.64		0.652	4.16	mg/kg dry	MAVPH	
Toluene	3.7		0.6	1.4	ug/kg dry	EPA 8260B	

Client ID: S-4

Lab ID: C513630-04RE2

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	550	JD	530	690	ug/kg dry	EPA 8260B	
Methyl-tert-Butyl Ether	350	D	37	140	ug/kg dry	EPA 8260B	

Client ID: S-5

Lab ID: C513630-05

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	1.7		0.7	1.1	ug/kg dry	EPA 8260B	
Acetone	100		4.0	5.3	ug/kg dry	EPA 8260B	
Benzene	0.9	J	0.4	1.1	ug/kg dry	EPA 8260B	
Ethylbenzene	2.5		0.6	1.1	ug/kg dry	EPA 8260B	
Isopropyl Ether	0.8	J	0.4	1.1	ug/kg dry	EPA 8260B	
m,p-Xylenes	3.5		1.0	2.1	ug/kg dry	EPA 8260B	
Methyl-tert-Butyl Ether	14		0.3	1.1	ug/kg dry	EPA 8260B	
Naphthalene	1.8		0.6	1.1	ug/kg dry	EPA 8260B	
o-Xylene	0.5	J	0.5	1.1	ug/kg dry	EPA 8260B	
Toluene	1.3		0.5	1.1	ug/kg dry	EPA 8260B	
Xylenes (Total)	4.0		1.0	2.1	ug/kg dry	EPA 8260B	

Client ID: S-6

Lab ID: C513630-06

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
4-Isopropyltoluene	1200	D	130	170	ug/kg dry	EPA 8260B	
Benzene	7900	D	69	170	ug/kg dry	EPA 8260B	
Isopropylbenzene	9400	D	93	170	ug/kg dry	EPA 8260B	
n-Butyl Benzene	7500	D	150	170	ug/kg dry	EPA 8260B	
sec-Butylbenzene	1700	D	110	170	ug/kg dry	EPA 8260B	

Client ID: S-6

Lab ID: C513630-06RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	120000	D	1200	1700	ug/kg dry	EPA 8260B	
1,3,5-Trimethylbenzene	34000	D	1000	1700	ug/kg dry	EPA 8260B	
C5-C8 Aliphatics	554	D	8.28	52.8	mg/kg dry	MAVPH	
C9-C10 Aromatics	580	D	5.28	17.6	mg/kg dry	MAVPH	
C9-C12 Aliphatics	753	D	26.4	52.8	mg/kg dry	MAVPH	
Ethylbenzene	38000	D	960	1700	ug/kg dry	EPA 8260B	
m,p-Xylenes	190000	D	1700	3400	ug/kg dry	EPA 8260B	
Naphthalene	21000	D	980	1700	ug/kg dry	EPA 8260B	
n-Propyl Benzene	18000	D	1100	1700	ug/kg dry	EPA 8260B	
o-Xylene	77000	D	890	1700	ug/kg dry	EPA 8260B	
Toluene	83000	D	790	1700	ug/kg dry	EPA 8260B	
Xylenes (Total)	270000	D	1700	3400	ug/kg dry	EPA 8260B	

ANALYTICAL RESULTS

Description: S-1

Lab Sample ID: C513630-01

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 09:30

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 92.95

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	125	D	mg/kg dry	16.1	8.16	52.1	5J26018	MAVPH	10/27/15 16:03	TAL	
C9-C10 Aromatics^	599	D	mg/kg dry	16.1	5.21	17.4	5J26018	MAVPH	10/27/15 16:03	TAL	
C9-C12 Aliphatics^	374	D	mg/kg dry	16.1	26.0	52.1	5J26018	MAVPH	10/27/15 16:03	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	0.00	16.1	8.68	%	70-130	5J26018	MAVPH	10/27/15 16:03	TAL	QS-04
2,5-Dibromotoluene (PID)	0.00	16.1	8.68	%	70-130	5J26018	MAVPH	10/27/15 16:03	TAL	QS-04

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	165	80	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	165	62	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	165	82	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	165	100	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	165	96	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	165	160	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	165	670	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	165	150	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	410000	D	ug/kg dry	4130	3000	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	165	150	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	165	120	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	165	78	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	165	94	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	165	98	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	120000	D	ug/kg dry	4130	2600	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	165	83	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	165	89	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	165	80	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	165	71	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
2-Butanone [78-93-3]^	ND		ug/kg dry	165	360	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	165	300	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	165	85	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	165	600	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
4-Isopropyltoluene [99-87-6]^	20000	D	ug/kg dry	4130	3400	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	165	640	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Acetone [67-64-1]^	ND		ug/kg dry	165	670	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Benzene [71-43-2]^	14000	D	ug/kg dry	165	71	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	165	71	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	165	130	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	165	83	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	165	91	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
Bromomethane [74-83-9]^	ND		ug/kg dry	165	160	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Carbon disulfide [75-15-0]^	ND		ug/kg dry	165	370	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	

ANALYTICAL RESULTS

Description: S-1

Lab Sample ID: C513630-01

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 09:30

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 92.95

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	165	85	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	165	96	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	165	76	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	165	120	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	165	94	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	165	75	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	165	92	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QL-02
Dibromomethane [74-95-3]^	ND		ug/kg dry	165	150	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Ethylbenzene [100-41-4]^	100000	D	ug/kg dry	4130	2500	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	165	160	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Isopropyl Ether [108-20-3]	ND		ug/kg dry	165	71	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Isopropylbenzene [98-82-8]^	10000	D	ug/kg dry	165	96	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	560000	D	ug/kg dry	4130	4400	8900	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	165	360	890	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/kg dry	165	48	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Naphthalene [91-20-3]^	68000	D	ug/kg dry	4130	2500	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
n-Butyl Benzene [104-51-8]^	29000	D	ug/kg dry	4130	4000	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
n-Propyl Benzene [103-65-1]^	53000	D	ug/kg dry	4130	2800	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
o-Xylene [95-47-6]^	240000	D	ug/kg dry	4130	2300	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
sec-Butylbenzene [135-98-8]^	6400	D	ug/kg dry	165	120	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	165	78	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	165	110	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	165	87	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Toluene [108-88-3]^	220000	D	ug/kg dry	4130	2000	4400	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	165	120	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	165	76	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	165	89	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	165	96	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	165	78	180	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Xylenes (Total) [1330-20-7]^	800000	D	ug/kg dry	4130	4400	8900	5K03010	EPA 8260B	11/03/15 17:48	JAJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	59	0.825	44.4	134 %	71-126	5K03010	EPA 8260B	11/03/15 12:39	JAJ	QS-03
4-Bromofluorobenzene	56	0.825	44.4	127 %	71-126	5K03010	EPA 8260B	11/03/15 17:48	JAJ	QS-03
Dibromofluoromethane	47	0.825	44.4	105 %	72-133	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Dibromofluoromethane	53	0.825	44.4	119 %	72-133	5K03010	EPA 8260B	11/03/15 17:48	JAJ	
Toluene-d8	44	0.825	44.4	99 %	80-123	5K03010	EPA 8260B	11/03/15 12:39	JAJ	
Toluene-d8	49	0.825	44.4	110 %	80-123	5K03010	EPA 8260B	11/03/15 17:48	JAJ	

ANALYTICAL RESULTS

Description: S-2

Lab Sample ID: C513630-02

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 09:45

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 87.55

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte</u> <u>[CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
C5-C8 Aliphatics^	ND		mg/kg dry	0.773	0.415	2.65	5J26018	MAVPH	10/26/15 19:31	TAL	
C9-C10 Aromatics^	ND		mg/kg dry	0.773	0.265	0.883	5J26018	MAVPH	10/26/15 19:31	TAL	
C9-C12 Aliphatics^	ND		mg/kg dry	0.773	1.32	2.65	5J26018	MAVPH	10/26/15 19:31	TAL	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene (FID)	11.5	0.773	8.83	131 %	70-130	5J26018	MAVPH	10/26/15 19:31	TAL	QS-03	
2,5-Dibromotoluene (PID)	9.49	0.773	8.83	108 %	70-130	5J26018	MAVPH	10/26/15 19:31	TAL		

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	0.782	0.3	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	0.782	3.4	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	1.3		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	0.6	J	ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
2-Butanone [78-93-3]^	9.3		ug/kg dry	0.782	1.8	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	0.782	1.5	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	0.782	3.0	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
4-Isopropyltoluene [99-87-6]^	ND		ug/kg dry	0.782	0.7	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	0.782	3.2	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Acetone [67-64-1]^	92		ug/kg dry	0.782	3.4	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Benzene [71-43-2]^	49		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	0.782	0.7	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Bromomethane [74-83-9]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Carbon disulfide [75-15-0]^	1.9	J	ug/kg dry	0.782	1.9	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	

ANALYTICAL RESULTS

Description: S-2

Lab Sample ID: C513630-02

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 09:45

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 87.55

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Dibromomethane [74-95-3]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Ethylbenzene [100-41-4]^	3.0		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Isopropyl Ether [108-20-3]	ND		ug/kg dry	200	91	230	5K03010	EPA 8260B	11/03/15 13:07	JAJ	
Isopropyl Ether [108-20-3]	0.3	J	ug/kg dry	0.76	0.3	0.9	5K03010	EPA 8260B	11/03/15 17:20	JAJ	
Isopropylbenzene [98-82-8]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	12		ug/kg dry	0.782	0.9	1.8	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	0.782	1.8	4.5	5K04019	EPA 8260B	11/04/15 13:07	JAJ	QB-01
Methyl-tert-Butyl Ether [1634-04-4]^	18		ug/kg dry	0.782	0.2	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Naphthalene [91-20-3]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
n-Butyl Benzene [104-51-8]^	ND		ug/kg dry	0.782	0.8	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
n-Propyl Benzene [103-65-1]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
o-Xylene [95-47-6]^	4.9		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
sec-Butylbenzene [135-98-8]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Toluene [108-88-3]^	4.8		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	0.782	0.6	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	0.782	0.5	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	0.782	0.4	0.9	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Xylenes (Total) [1330-20-7]^	17		ug/kg dry	0.782	0.9	1.8	5K04019	EPA 8260B	11/04/15 13:07	JAJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	56	0.782	44.7	126 %	71-126	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Dibromofluoromethane	53	0.782	44.7	120 %	72-133	5K04019	EPA 8260B	11/04/15 13:07	JAJ	
Toluene-d8	50	0.782	44.7	112 %	80-123	5K04019	EPA 8260B	11/04/15 13:07	JAJ	

ANALYTICAL RESULTS

Description: S-3

Lab Sample ID: C513630-03

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:05

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 84.81

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	23.5	D	mg/kg dry	1.53	0.846	5.40	5J26018	MAVPH	10/27/15 12:37	TAL	
C9-C10 Aromatics^	56.6	D	mg/kg dry	1.53	0.540	1.80	5J26018	MAVPH	10/27/15 12:37	TAL	
C9-C12 Aliphatics^	43.2	D	mg/kg dry	1.53	2.70	5.40	5J26018	MAVPH	10/27/15 12:37	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	9.62	1.53	9.00	107 %	70-130	5J26018	MAVPH	10/27/15 12:37	TAL	
2,5-Dibromotoluene (PID)	9.47	1.53	9.00	105 %	70-130	5J26018	MAVPH	10/27/15 12:37	TAL	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	0.729	0.3	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	0.729	0.8	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	0.729	3.3	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	0.729	0.7	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	16000	D	ug/kg dry	147	120	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	0.729	0.7	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	0.729	0.6	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	4800	D	ug/kg dry	147	100	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	0.729	0.3	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
2-Butanone [78-93-3]^	ND		ug/kg dry	0.729	1.7	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	0.729	1.5	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	0.729	2.9	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
4-Isopropyltoluene [99-87-6]^	68		ug/kg dry	0.729	0.7	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	0.729	3.1	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Acetone [67-64-1]^	2100	D	ug/kg dry	147	660	870	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Benzene [71-43-2]^	340	D	ug/kg dry	147	69	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	0.729	0.3	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	0.729	0.6	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
Bromomethane [74-83-9]^	ND		ug/kg dry	0.729	0.8	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Carbon disulfide [75-15-0]^	ND		ug/kg dry	0.729	1.8	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	

ANALYTICAL RESULTS

Description: S-3

Lab Sample ID: C513630-03

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:05

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 84.81

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	0.729	0.6	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	QL-02
Dibromomethane [74-95-3]^	ND		ug/kg dry	0.729	0.7	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Ethylbenzene [100-41-4]^	2000	D	ug/kg dry	147	97	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	0.729	0.8	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Isopropyl Ether [108-20-3]	ND		ug/kg dry	0.729	0.3	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Isopropylbenzene [98-82-8]^	390	D	ug/kg dry	147	94	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	29000	D	ug/kg dry	147	170	350	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	0.729	1.7	4.3	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/kg dry	0.729	0.2	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Naphthalene [91-20-3]^	2000	D	ug/kg dry	147	99	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
n-Butyl Benzene [104-51-8]^	ND		ug/kg dry	0.729	0.8	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
n-Propyl Benzene [103-65-1]^	1100	D	ug/kg dry	147	110	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
o-Xylene [95-47-6]^	1800	D	ug/kg dry	147	90	170	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
sec-Butylbenzene [135-98-8]^	69		ug/kg dry	0.729	0.6	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Toluene [108-88-3]^	86		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	0.729	0.6	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	0.729	0.5	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	0.729	0.4	0.9	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Xylenes (Total) [1330-20-7]^	31000	D	ug/kg dry	147	170	350	5K03010	EPA 8260B	11/03/15 18:44	JAJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	45	0.729	43.0	104 %	71-126	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
4-Bromofluorobenzene	55	0.736	43.4	126 %	71-126	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Dibromofluoromethane	49	0.729	43.0	115 %	72-133	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Dibromofluoromethane	50	0.736	43.4	116 %	72-133	5K03010	EPA 8260B	11/03/15 18:44	JAJ	
Toluene-d8	46	0.729	43.0	106 %	80-123	5K03010	EPA 8260B	11/03/15 14:03	JAJ	
Toluene-d8	47	0.736	43.4	109 %	80-123	5K03010	EPA 8260B	11/03/15 18:44	JAJ	

ANALYTICAL RESULTS

Description: S-4

Lab Sample ID: C513630-04

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:20

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 72.05

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	5.64		mg/kg dry	1	0.652	4.16	5J26018	MAVPH	10/26/15 20:32	TAL	
C9-C10 Aromatics^	ND		mg/kg dry	1	0.416	1.39	5J26018	MAVPH	10/26/15 20:32	TAL	
C9-C12 Aliphatics^	ND		mg/kg dry	1	2.08	4.16	5J26018	MAVPH	10/26/15 20:32	TAL	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
2,5-Dibromotoluene (FID)	12.7	1	13.3	95 %	70-130	5J26018	MAVPH	10/26/15 20:32	TAL		
2,5-Dibromotoluene (PID)	11.1	1	13.3	83 %	70-130	5J26018	MAVPH	10/26/15 20:32	TAL		

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	1	0.5	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	1	1.3	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	1	5.3	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	1	1.2	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/kg dry	100	94	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	1	1.2	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/kg dry	100	82	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
2-Butanone [78-93-3]^	ND		ug/kg dry	1	2.8	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	1	2.4	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	1	4.7	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
4-Isopropyltoluene [99-87-6]^	ND		ug/kg dry	1	1.1	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	1	5.0	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Acetone [67-64-1]^	550	JD	ug/kg dry	100	530	690	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Benzene [71-43-2]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	1	1.0	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
Bromomethane [74-83-9]^	ND		ug/kg dry	1	1.2	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Carbon disulfide [75-15-0]^	ND		ug/kg dry	1	2.9	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	

ANALYTICAL RESULTS

Description: S-4

Lab Sample ID: C513630-04

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:20

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 72.05

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	QL-02
Dibromomethane [74-95-3]^	ND		ug/kg dry	1	1.2	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Ethylbenzene [100-41-4]^	ND		ug/kg dry	100	78	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	1	1.3	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Isopropyl Ether [108-20-3]	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Isopropylbenzene [98-82-8]^	ND		ug/kg dry	100	75	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	ND		ug/kg dry	100	140	280	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	1	2.8	6.9	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Methyl-tert-Butyl Ether [1634-04-4]^	350	D	ug/kg dry	100	37	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Naphthalene [91-20-3]^	ND		ug/kg dry	100	79	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
n-Butyl Benzene [104-51-8]^	ND		ug/kg dry	1	1.2	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
n-Propyl Benzene [103-65-1]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
o-Xylene [95-47-6]^	ND		ug/kg dry	100	72	140	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
sec-Butylbenzene [135-98-8]^	ND		ug/kg dry	1	0.9	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	1	0.8	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Toluene [108-88-3]^	3.7		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	1	1.0	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	1	0.7	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	1	0.6	1.4	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Xylenes (Total) [1330-20-7]^	ND		ug/kg dry	100	140	280	5K04019	EPA 8260B	11/04/15 13:35	JAJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	67	1	63.7	105 %	71-126	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
4-Bromofluorobenzene	78	1	64.1	121 %	71-126	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Dibromofluoromethane	71	1	63.7	112 %	72-133	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Dibromofluoromethane	76	1	64.1	119 %	72-133	5K04019	EPA 8260B	11/04/15 13:35	JAJ	
Toluene-d8	70	1	63.7	110 %	80-123	5K03010	EPA 8260B	11/03/15 14:31	JAJ	
Toluene-d8	74	1	64.1	115 %	80-123	5K04019	EPA 8260B	11/04/15 13:35	JAJ	

ANALYTICAL RESULTS

Description: S-5

Lab Sample ID: C513630-05

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:30

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 78.35

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	ND		mg/kg dry	0.846	0.508	3.24	5J26018	MAVPH	10/26/15 21:03	TAL	
C9-C10 Aromatics^	ND		mg/kg dry	0.846	0.324	1.08	5J26018	MAVPH	10/26/15 21:03	TAL	
C9-C12 Aliphatics^	ND		mg/kg dry	0.846	1.62	3.24	5J26018	MAVPH	10/26/15 21:03	TAL	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
2,5-Dibromotoluene (FID)	11.6	0.846	10.8	107 %	70-130	5J26018	MAVPH	10/26/15 21:03	TAL		
2,5-Dibromotoluene (PID)	10.5	0.846	10.8	97 %	70-130	5J26018	MAVPH	10/26/15 21:03	TAL		

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	0.824	1.0	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	0.824	4.0	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	0.824	0.9	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	1.7		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	0.824	0.9	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
2-Butanone [78-93-3]^	ND		ug/kg dry	0.824	2.1	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	0.824	1.8	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	0.824	3.6	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
4-Isopropyltoluene [99-87-6]^	ND		ug/kg dry	0.824	0.8	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	0.824	3.8	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Acetone [67-64-1]^	100		ug/kg dry	0.824	4.0	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Benzene [71-43-2]^	0.9	J	ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	0.824	0.8	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
Bromomethane [74-83-9]^	ND		ug/kg dry	0.824	0.9	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Carbon disulfide [75-15-0]^	ND		ug/kg dry	0.824	2.2	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	

ANALYTICAL RESULTS

Description: S-5

Lab Sample ID: C513630-05

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:30

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 78.35

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	QL-02
Dibromomethane [74-95-3]^	ND		ug/kg dry	0.824	0.9	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Ethylbenzene [100-41-4]^	2.5		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	0.824	1.0	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Isopropyl Ether [108-20-3]	0.8	J	ug/kg dry	0.824	0.4	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Isopropylbenzene [98-82-8]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	3.5		ug/kg dry	0.824	1.0	2.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	0.824	2.1	5.3	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Methyl-tert-Butyl Ether [1634-04-4]^	14		ug/kg dry	0.824	0.3	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Naphthalene [91-20-3]^	1.8		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
n-Butyl Benzene [104-51-8]^	ND		ug/kg dry	0.824	0.9	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
n-Propyl Benzene [103-65-1]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
o-Xylene [95-47-6]^	0.5	J	ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
sec-Butylbenzene [135-98-8]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Toluene [108-88-3]^	1.3		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	0.824	0.7	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	0.824	0.6	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	0.824	0.5	1.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Xylenes (Total) [1330-20-7]^	4.0		ug/kg dry	0.824	1.0	2.1	5K03010	EPA 8260B	11/03/15 14:59	JAJ	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
4-Bromofluorobenzene	64	0.824	52.6	122 %	71-126	5K03010	EPA 8260B	11/03/15 14:59	JAJ		
Dibromofluoromethane	61	0.824	52.6	116 %	72-133	5K03010	EPA 8260B	11/03/15 14:59	JAJ		
Toluene-d8	59	0.824	52.6	111 %	80-123	5K03010	EPA 8260B	11/03/15 14:59	JAJ		

ANALYTICAL RESULTS

Description: S-6

Lab Sample ID: C513630-06

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:50

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 88.87

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	554	D	mg/kg dry	15.6	8.28	52.8	5J26018	MAVPH	10/27/15 13:07	TAL	
C9-C10 Aromatics^	580	D	mg/kg dry	15.6	5.28	17.6	5J26018	MAVPH	10/27/15 13:07	TAL	
C9-C12 Aliphatics^	753	D	mg/kg dry	15.6	26.4	52.8	5J26018	MAVPH	10/27/15 13:07	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	0.00	15.6	8.81	%	70-130	5J26018	MAVPH	10/27/15 13:07	TAL	QS-04
2,5-Dibromotoluene (PID)	0.00	15.6	8.81	%	70-130	5J26018	MAVPH	10/27/15 13:07	TAL	QS-04

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/kg dry	153	77	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/kg dry	153	60	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/kg dry	153	79	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/kg dry	153	100	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1-Dichloroethane [75-34-3]^	ND		ug/kg dry	153	98	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1-Dichloroethene [75-35-4]^	ND		ug/kg dry	153	110	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,1-Dichloropropene [563-58-6]^	ND		ug/kg dry	153	93	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/kg dry	153	160	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/kg dry	153	650	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/kg dry	153	150	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,2,4-Trimethylbenzene [95-63-6]^	120000	D	ug/kg dry	1530	1200	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/kg dry	153	150	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
1,2-Dibromoethane [106-93-4]^	ND		ug/kg dry	153	120	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
1,2-Dichlorobenzene [95-50-1]^	ND		ug/kg dry	153	76	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
1,2-Dichloroethane [107-06-2]^	ND		ug/kg dry	153	91	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,2-Dichloropropane [78-87-5]^	ND		ug/kg dry	153	94	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,3,5-Trimethylbenzene [108-67-8]^	34000	D	ug/kg dry	1530	1000	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/kg dry	153	81	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
1,3-Dichloropropane [142-28-9]^	ND		ug/kg dry	153	86	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/kg dry	153	77	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
2,2-Dichloropropane [594-20-7]^	ND		ug/kg dry	153	69	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
2-Butanone [78-93-3]^	ND		ug/kg dry	153	340	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
2-Chloroethyl Vinyl Ether [110-75-8]^	ND		ug/kg dry	153	290	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
2-Chlorotoluene [95-49-8]^	ND		ug/kg dry	153	82	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
2-Hexanone [591-78-6]^	ND		ug/kg dry	153	580	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
4-Chlorotoluene [106-43-4]^	ND		ug/kg dry	153	100	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
4-Isopropyltoluene [99-87-6]^	1200	D	ug/kg dry	153	130	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
4-Methyl-2-pentanone [108-10-1]^	ND		ug/kg dry	153	620	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Acetone [67-64-1]^	ND		ug/kg dry	153	650	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Benzene [71-43-2]^	7900	D	ug/kg dry	153	69	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Bromobenzene [108-86-1]^	ND		ug/kg dry	153	69	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Bromochloromethane [74-97-5]^	ND		ug/kg dry	153	130	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Bromodichloromethane [75-27-4]^	ND		ug/kg dry	153	81	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Bromoform [75-25-2]^	ND		ug/kg dry	153	88	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
Bromomethane [74-83-9]^	ND		ug/kg dry	153	150	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Carbon disulfide [75-15-0]^	ND		ug/kg dry	153	360	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Carbon Tetrachloride [56-23-5]^	ND		ug/kg dry	153	100	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	

ANALYTICAL RESULTS

Description: S-6

Lab Sample ID: C513630-06

Received: 10/23/15 10:50

Matrix: Soil

Sampled: 10/22/15 10:50

Work Order: C513630

Project: Grocery Bag

Sampled By: Thomas Will

% Solids: 88.87

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NC 424]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Chlorobenzene [108-90-7]^	ND		ug/kg dry	153	82	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Chloroethane [75-00-3]^	ND		ug/kg dry	153	93	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Chloroform [67-66-3]^	ND		ug/kg dry	153	74	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Chloromethane [74-87-3]^	ND		ug/kg dry	153	110	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/kg dry	153	91	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/kg dry	153	72	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Dibromochloromethane [124-48-1]^	ND		ug/kg dry	153	89	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QL-02
Dibromomethane [74-95-3]^	ND		ug/kg dry	153	150	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Dichlorodifluoromethane [75-71-8]^	ND		ug/kg dry	153	110	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Ethylbenzene [100-41-4]^	38000	D	ug/kg dry	1530	960	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
Hexachlorobutadiene [87-68-3]^	ND		ug/kg dry	153	160	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Isopropyl Ether [108-20-3]	ND		ug/kg dry	153	69	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Isopropylbenzene [98-82-8]^	9400	D	ug/kg dry	153	93	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
m,p-Xylenes [108-38-3/106-42-3]^	190000	D	ug/kg dry	1530	1700	3400	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
Methylene Chloride [75-09-2]^	ND		ug/kg dry	153	340	860	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/kg dry	153	46	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Naphthalene [91-20-3]^	21000	D	ug/kg dry	1530	980	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
n-Butyl Benzene [104-51-8]^	7500	D	ug/kg dry	153	150	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
n-Propyl Benzene [103-65-1]^	18000	D	ug/kg dry	1530	1100	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
o-Xylene [95-47-6]^	77000	D	ug/kg dry	1530	890	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
sec-Butylbenzene [135-98-8]^	1700	D	ug/kg dry	153	110	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Styrene [100-42-5]^	ND		ug/kg dry	153	76	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
tert-Butylbenzene [98-06-6]^	ND		ug/kg dry	153	100	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Tetrachloroethene [127-18-4]^	ND		ug/kg dry	153	84	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Toluene [108-88-3]^	83000	D	ug/kg dry	1530	790	1700	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/kg dry	153	120	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/kg dry	153	74	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Trichloroethene [79-01-6]^	ND		ug/kg dry	153	86	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Trichlorofluoromethane [75-69-4]^	ND		ug/kg dry	153	93	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Vinyl chloride [75-01-4]^	ND		ug/kg dry	153	76	170	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Xylenes (Total) [1330-20-7]^	270000	D	ug/kg dry	1530	1700	3400	5K03010	EPA 8260B	11/03/15 18:16	JAJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	54	0.763	42.9	127 %	71-126	5K03010	EPA 8260B	11/03/15 13:35	JAJ	QS-03
4-Bromofluorobenzene	54	0.763	42.9	125 %	71-126	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
Dibromofluoromethane	50	0.763	42.9	116 %	72-133	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Dibromofluoromethane	51	0.763	42.9	119 %	72-133	5K03010	EPA 8260B	11/03/15 18:16	JAJ	
Toluene-d8	45	0.763	42.9	105 %	80-123	5K03010	EPA 8260B	11/03/15 13:35	JAJ	
Toluene-d8	48	0.763	42.9	112 %	80-123	5K03010	EPA 8260B	11/03/15 18:16	JAJ	

QUALITY CONTROL DATA

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5J26018 - EPA 5035

Blank (5J26018-BLK1)

Prepared: 10/26/2015 10:07 Analyzed: 10/26/2015 15:06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	0.470	U	3.00	mg/kg wet							
C9-C10 Aromatics	0.300	U	1.00	mg/kg wet							
C9-C12 Aliphatics	1.50	U	3.00	mg/kg wet							
2,5-Dibromotoluene (FID)	12.8			mg/kg wet	10.0		128	70-130			
2,5-Dibromotoluene (PID)	10.5			mg/kg wet	10.0		105	70-130			

LCS (5J26018-BS1)

Prepared: 10/26/2015 10:07 Analyzed: 10/26/2015 15:53

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	10.3		3.00	mg/kg wet	12.0		86	70-130			
C9-C10 Aromatics	3.93		1.00	mg/kg wet	4.00		98	70-130			
C9-C12 Aliphatics	11.7		3.00	mg/kg wet	12.0		97	70-130			
2,5-Dibromotoluene (FID)	11.8			mg/kg wet	10.0		118	70-130			
2,5-Dibromotoluene (PID)	10.6			mg/kg wet	10.0		106	70-130			

LCS Dup (5J26018-BSD1)

Prepared: 10/26/2015 10:07 Analyzed: 10/26/2015 16:23

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	10.7		3.00	mg/kg wet	12.0		89	70-130	4	25	
C9-C10 Aromatics	3.92		1.00	mg/kg wet	4.00		98	70-130	0.4	25	
C9-C12 Aliphatics	11.7		3.00	mg/kg wet	12.0		98	70-130	0.7	25	
2,5-Dibromotoluene (FID)	11.4			mg/kg wet	10.0		114	70-130			
2,5-Dibromotoluene (PID)	10.0			mg/kg wet	10.0		100	70-130			

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K03010 - EPA 5030B_MS

Blank (5K03010-BLK1)

Prepared: 11/03/2015 00:00 Analyzed: 11/03/2015 11:35

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.4	U	1.0	ug/kg wet							
1,1,1-Trichloroethane	0.4	U	1.0	ug/kg wet							
1,1,2,2-Tetrachloroethane	0.5	U	1.0	ug/kg wet							
1,1,2-Trichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethene	0.6	U	1.0	ug/kg wet							
1,1-Dichloropropene	0.5	U	1.0	ug/kg wet							
1,2,3-Trichlorobenzene	0.9	U	1.0	ug/kg wet							
1,2,3-Trichloropropane	3.8	U	5.0	ug/kg wet							
1,2,4-Trichlorobenzene	0.8	U	1.0	ug/kg wet							
1,2,4-Trimethylbenzene	0.7	U	1.0	ug/kg wet							
1,2-Dibromo-3-chloropropane	0.8	U	1.0	ug/kg wet							
1,2-Dibromoethane	0.7	U	1.0	ug/kg wet							
1,2-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
1,2-Dichloroethane	0.5	U	1.0	ug/kg wet							
1,2-Dichloropropane	0.6	U	1.0	ug/kg wet							
1,3,5-Trimethylbenzene	0.6	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K03010 - EPA 5030B_MS - Continued

Blank (5K03010-BLK1) Continued

Prepared: 11/03/2015 00:00 Analyzed: 11/03/2015 11:35

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,3-Dichlorobenzene	0.5	U	1.0	ug/kg wet							
1,3-Dichloropropane	0.5	U	1.0	ug/kg wet							
1,4-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
2,2-Dichloropropane	0.4	U	1.0	ug/kg wet							
2-Butanone	2.0	U	5.0	ug/kg wet							
2-Chloroethyl Vinyl Ether	1.7	U	5.0	ug/kg wet							
2-Chlorotoluene	0.5	U	1.0	ug/kg wet							
2-Hexanone	3.4	U	5.0	ug/kg wet							
4-Chlorotoluene	0.6	U	1.0	ug/kg wet							
4-Isopropyltoluene	0.8	U	1.0	ug/kg wet							
4-Methyl-2-pentanone	3.6	U	5.0	ug/kg wet							
Acetone	3.8	U	5.0	ug/kg wet							
Benzene	0.4	U	1.0	ug/kg wet							
Bromobenzene	0.4	U	1.0	ug/kg wet							
Bromochloromethane	0.8	U	1.0	ug/kg wet							
Bromodichloromethane	0.5	U	1.0	ug/kg wet							
Bromoform	0.5	U	1.0	ug/kg wet							
Bromomethane	0.9	U	1.0	ug/kg wet							
Carbon disulfide	2.1	U	5.0	ug/kg wet							
Carbon Tetrachloride	0.6	U	1.0	ug/kg wet							
Chlorobenzene	0.5	U	1.0	ug/kg wet							
Chloroethane	0.5	U	1.0	ug/kg wet							
Chloroform	0.4	U	1.0	ug/kg wet							
Chloromethane	0.6	U	1.0	ug/kg wet							
cis-1,2-Dichloroethene	0.5	U	1.0	ug/kg wet							
cis-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Dibromochloromethane	0.5	U	1.0	ug/kg wet							
Dibromomethane	0.9	U	1.0	ug/kg wet							
Dichlorodifluoromethane	0.6	U	1.0	ug/kg wet							
Ethylbenzene	0.6	U	1.0	ug/kg wet							
Hexachlorobutadiene	0.9	U	1.0	ug/kg wet							
Isopropyl Ether	0.4	U	1.0	ug/kg wet							
Isopropylbenzene	0.5	U	1.0	ug/kg wet							
m,p-Xylenes	1.0	U	2.0	ug/kg wet							
Methylene Chloride	2.0	U	5.0	ug/kg wet							
Methyl-tert-Butyl Ether	0.3	U	1.0	ug/kg wet							
Naphthalene	0.6	U	1.0	ug/kg wet							
n-Butyl Benzene	0.9	U	1.0	ug/kg wet							
n-Propyl Benzene	0.6	U	1.0	ug/kg wet							
o-Xylene	0.5	U	1.0	ug/kg wet							
sec-Butylbenzene	0.6	U	1.0	ug/kg wet							
Styrene	0.4	U	1.0	ug/kg wet							
tert-Butylbenzene	0.6	U	1.0	ug/kg wet							
Tetrachloroethene	0.5	U	1.0	ug/kg wet							
Toluene	0.5	U	1.0	ug/kg wet							
trans-1,2-Dichloroethene	0.7	U	1.0	ug/kg wet							
trans-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Trichloroethene	0.5	U	1.0	ug/kg wet							
Trichlorofluoromethane	0.5	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K03010 - EPA 5030B_MS - Continued

Blank (5K03010-BLK1) Continued

Prepared: 11/03/2015 00:00 Analyzed: 11/03/2015 11:35

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl chloride	0.4	U	1.0	ug/kg wet							
Xylenes (Total)	1.0	U	2.0	ug/kg wet							
4-Bromofluorobenzene	63			ug/kg wet	50.0		126	71-126			
Dibromofluoromethane	60			ug/kg wet	50.0		120	72-133			
Toluene-d8	59			ug/kg wet	50.0		117	80-123			

LCS (5K03010-BS1)

Prepared: 11/03/2015 00:00 Analyzed: 11/03/2015 09:15

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		1.0	ug/kg wet	20.0		117	22-166			
Benzene	24		1.0	ug/kg wet	20.0		118	49-142			
Chlorobenzene	27		1.0	ug/kg wet	20.0		133	45-147			
Toluene	23		1.0	ug/kg wet	20.0		115	55-136			
Trichloroethene	25		1.0	ug/kg wet	20.0		126	51-147			
4-Bromofluorobenzene	58			ug/kg wet	50.0		117	71-126			
Dibromofluoromethane	57			ug/kg wet	50.0		115	72-133			
Toluene-d8	57			ug/kg wet	50.0		114	80-123			

LCS Dup (5K03010-BSD1)

Prepared: 11/03/2015 00:00 Analyzed: 11/03/2015 09:43

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/kg wet	20.0		101	22-166	15	23	
Benzene	22		1.0	ug/kg wet	20.0		108	49-142	9	19	
Chlorobenzene	23		1.0	ug/kg wet	20.0		117	45-147	13	18	
Toluene	21		1.0	ug/kg wet	20.0		105	55-136	10	21	
Trichloroethene	22		1.0	ug/kg wet	20.0		111	51-147	12	26	
4-Bromofluorobenzene	60			ug/kg wet	50.0		120	71-126			
Dibromofluoromethane	57			ug/kg wet	50.0		114	72-133			
Toluene-d8	58			ug/kg wet	50.0		117	80-123			

Batch 5K04019 - EPA 5030B_MS

Blank (5K04019-BLK1)

Prepared: 11/04/2015 00:00 Analyzed: 11/04/2015 11:14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.4	U	1.0	ug/kg wet							
1,1,1-Trichloroethane	0.4	U	1.0	ug/kg wet							
1,1,2,2-Tetrachloroethane	0.5	U	1.0	ug/kg wet							
1,1,2-Trichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethene	0.6	U	1.0	ug/kg wet							
1,1-Dichloropropene	0.5	U	1.0	ug/kg wet							
1,2,3-Trichlorobenzene	0.9	U	1.0	ug/kg wet							
1,2,3-Trichloropropane	3.8	U	5.0	ug/kg wet							
1,2,4-Trichlorobenzene	0.8	U	1.0	ug/kg wet							
1,2,4-Trimethylbenzene	0.7	U	1.0	ug/kg wet							
1,2-Dibromo-3-chloropropane	0.8	U	1.0	ug/kg wet							
1,2-Dibromoethane	0.7	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K04019 - EPA 5030B_MS - Continued

Blank (5K04019-BLK1) Continued

Prepared: 11/04/2015 00:00 Analyzed: 11/04/2015 11:14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
1,2-Dichloroethane	0.5	U	1.0	ug/kg wet							
1,2-Dichloropropane	0.6	U	1.0	ug/kg wet							
1,3,5-Trimethylbenzene	0.6	U	1.0	ug/kg wet							
1,3-Dichlorobenzene	0.5	U	1.0	ug/kg wet							
1,3-Dichloropropane	0.5	U	1.0	ug/kg wet							
1,4-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
2,2-Dichloropropane	0.4	U	1.0	ug/kg wet							
2-Butanone	2.0	U	5.0	ug/kg wet							
2-Chloroethyl Vinyl Ether	1.7	U	5.0	ug/kg wet							
2-Chlorotoluene	0.5	U	1.0	ug/kg wet							
2-Hexanone	3.4	U	5.0	ug/kg wet							
4-Chlorotoluene	0.6	U	1.0	ug/kg wet							
4-Isopropyltoluene	0.8	U	1.0	ug/kg wet							
4-Methyl-2-pentanone	3.6	U	5.0	ug/kg wet							
Acetone	3.8	U	5.0	ug/kg wet							
Benzene	0.4	U	1.0	ug/kg wet							
Bromobenzene	0.4	U	1.0	ug/kg wet							
Bromochloromethane	0.8	U	1.0	ug/kg wet							
Bromodichloromethane	0.5	U	1.0	ug/kg wet							
Bromoform	0.5	U	1.0	ug/kg wet							
Bromomethane	0.9	U	1.0	ug/kg wet							
Carbon disulfide	2.1	U	5.0	ug/kg wet							
Carbon Tetrachloride	0.6	U	1.0	ug/kg wet							
Chlorobenzene	0.5	U	1.0	ug/kg wet							
Chloroethane	0.5	U	1.0	ug/kg wet							
Chloroform	0.4	U	1.0	ug/kg wet							
Chloromethane	0.6	U	1.0	ug/kg wet							
cis-1,2-Dichloroethene	0.5	U	1.0	ug/kg wet							
cis-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Dibromochloromethane	0.5	U	1.0	ug/kg wet							
Dibromomethane	0.9	U	1.0	ug/kg wet							
Dichlorodifluoromethane	0.6	U	1.0	ug/kg wet							
Ethylbenzene	0.6	U	1.0	ug/kg wet							
Hexachlorobutadiene	0.9	U	1.0	ug/kg wet							
Isopropylbenzene	0.5	U	1.0	ug/kg wet							
m,p-Xylenes	1.0	U	2.0	ug/kg wet							
Methylene Chloride	4.1	J	5.0	ug/kg wet							QB-01
Methyl-tert-Butyl Ether	0.3	U	1.0	ug/kg wet							
Naphthalene	0.6	U	1.0	ug/kg wet							
n-Butyl Benzene	0.9	U	1.0	ug/kg wet							
n-Propyl Benzene	0.6	U	1.0	ug/kg wet							
o-Xylene	0.5	U	1.0	ug/kg wet							
sec-Butylbenzene	0.6	U	1.0	ug/kg wet							
Styrene	0.4	U	1.0	ug/kg wet							
tert-Butylbenzene	0.6	U	1.0	ug/kg wet							
Tetrachloroethene	0.5	U	1.0	ug/kg wet							
Toluene	0.5	U	1.0	ug/kg wet							
trans-1,2-Dichloroethene	0.7	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K04019 - EPA 5030B_MS - Continued

Blank (5K04019-BLK1) Continued

Prepared: 11/04/2015 00:00 Analyzed: 11/04/2015 11:14

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Trichloroethene	0.5	U	1.0	ug/kg wet							
Trichlorofluoromethane	0.5	U	1.0	ug/kg wet							
Vinyl chloride	0.4	U	1.0	ug/kg wet							
Xylenes (Total)	1.0	U	2.0	ug/kg wet							
4-Bromofluorobenzene	56			ug/kg wet	50.0		112	71-126			
Dibromofluoromethane	55			ug/kg wet	50.0		110	72-133			
Toluene-d8	52			ug/kg wet	50.0		103	80-123			

LCS (5K04019-BS1)

Prepared: 11/04/2015 00:00 Analyzed: 11/04/2015 10:18

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/kg wet	20.0		75	22-166			
Benzene	16		1.0	ug/kg wet	20.0		81	49-142			
Chlorobenzene	18		1.0	ug/kg wet	20.0		90	45-147			
Toluene	16		1.0	ug/kg wet	20.0		79	55-136			
Trichloroethene	17		1.0	ug/kg wet	20.0		86	51-147			
4-Bromofluorobenzene	60			ug/kg wet	50.0		119	71-126			
Dibromofluoromethane	58			ug/kg wet	50.0		116	72-133			
Toluene-d8	56			ug/kg wet	50.0		111	80-123			

LCS Dup (5K04019-BSD1)

Prepared: 11/04/2015 00:00 Analyzed: 11/04/2015 10:46

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/kg wet	20.0		73	22-166	3	23	
Benzene	15		1.0	ug/kg wet	20.0		76	49-142	6	19	
Chlorobenzene	17		1.0	ug/kg wet	20.0		86	45-147	6	18	
Toluene	15		1.0	ug/kg wet	20.0		73	55-136	7	21	
Trichloroethene	16		1.0	ug/kg wet	20.0		82	51-147	5	26	
4-Bromofluorobenzene	58			ug/kg wet	50.0		116	71-126			
Dibromofluoromethane	58			ug/kg wet	50.0		115	72-133			
Toluene-d8	54			ug/kg wet	50.0		108	80-123			

Batch 5K05023 - EPA 5030B_MS

Blank (5K05023-BLK1)

Prepared: 11/05/2015 00:00 Analyzed: 11/05/2015 10:43

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.4	U	1.0	ug/kg wet							
1,1,1-Trichloroethane	0.4	U	1.0	ug/kg wet							
1,1,2,2-Tetrachloroethane	0.5	U	1.0	ug/kg wet							
1,1,2-Trichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethane	0.6	U	1.0	ug/kg wet							
1,1-Dichloroethene	0.6	U	1.0	ug/kg wet							
1,1-Dichloropropene	0.5	U	1.0	ug/kg wet							
1,2,3-Trichlorobenzene	0.9	U	1.0	ug/kg wet							
1,2,3-Trichloropropane	3.8	U	5.0	ug/kg wet							
1,2,4-Trichlorobenzene	0.8	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05023 - EPA 5030B_MS - Continued

Blank (5K05023-BLK1) Continued

Prepared: 11/05/2015 00:00 Analyzed: 11/05/2015 10:43

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trimethylbenzene	0.7	U	1.0	ug/kg wet							
1,2-Dibromo-3-chloropropane	0.8	U	1.0	ug/kg wet							
1,2-Dibromoethane	0.7	U	1.0	ug/kg wet							
1,2-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
1,2-Dichloroethane	0.5	U	1.0	ug/kg wet							
1,2-Dichloropropane	0.6	U	1.0	ug/kg wet							
1,3,5-Trimethylbenzene	0.6	U	1.0	ug/kg wet							
1,3-Dichlorobenzene	0.5	U	1.0	ug/kg wet							
1,3-Dichloropropane	0.5	U	1.0	ug/kg wet							
1,4-Dichlorobenzene	0.4	U	1.0	ug/kg wet							
2,2-Dichloropropane	0.4	U	1.0	ug/kg wet							
2-Butanone	2.0	U	5.0	ug/kg wet							
2-Chloroethyl Vinyl Ether	1.7	U	5.0	ug/kg wet							
2-Chlorotoluene	0.5	U	1.0	ug/kg wet							
2-Hexanone	3.4	U	5.0	ug/kg wet							
4-Chlorotoluene	0.6	U	1.0	ug/kg wet							
4-Isopropyltoluene	0.8	U	1.0	ug/kg wet							
4-Methyl-2-pentanone	3.6	U	5.0	ug/kg wet							
Acetone	3.8	U	5.0	ug/kg wet							
Benzene	0.4	U	1.0	ug/kg wet							
Bromobenzene	0.4	U	1.0	ug/kg wet							
Bromochloromethane	0.8	U	1.0	ug/kg wet							
Bromodichloromethane	0.5	U	1.0	ug/kg wet							
Bromoform	0.5	U	1.0	ug/kg wet							
Bromomethane	0.9	U	1.0	ug/kg wet							
Carbon disulfide	2.1	U	5.0	ug/kg wet							
Carbon Tetrachloride	0.6	U	1.0	ug/kg wet							
Chlorobenzene	0.5	U	1.0	ug/kg wet							
Chloroethane	0.5	U	1.0	ug/kg wet							
Chloroform	0.4	U	1.0	ug/kg wet							
Chloromethane	0.6	U	1.0	ug/kg wet							
cis-1,2-Dichloroethene	0.5	U	1.0	ug/kg wet							
cis-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Dibromochloromethane	0.5	U	1.0	ug/kg wet							
Dibromomethane	0.9	U	1.0	ug/kg wet							
Dichlorodifluoromethane	0.6	U	1.0	ug/kg wet							
Ethylbenzene	0.6	U	1.0	ug/kg wet							
Hexachlorobutadiene	0.9	U	1.0	ug/kg wet							
Isopropylbenzene	0.5	U	1.0	ug/kg wet							
m,p-Xylenes	1.0	U	2.0	ug/kg wet							
Methylene Chloride	10		5.0	ug/kg wet							
Methyl-tert-Butyl Ether	0.3	U	1.0	ug/kg wet							
Naphthalene	0.6	U	1.0	ug/kg wet							
n-Butyl Benzene	0.9	U	1.0	ug/kg wet							
n-Propyl Benzene	0.6	U	1.0	ug/kg wet							
o-Xylene	0.5	U	1.0	ug/kg wet							
sec-Butylbenzene	0.6	U	1.0	ug/kg wet							
Styrene	0.4	U	1.0	ug/kg wet							
tert-Butylbenzene	0.6	U	1.0	ug/kg wet							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05023 - EPA 5030B_MS - Continued

Blank (5K05023-BLK1) Continued

Prepared: 11/05/2015 00:00 Analyzed: 11/05/2015 10:43

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Tetrachloroethene	0.5	U	1.0	ug/kg wet							
Toluene	0.5	U	1.0	ug/kg wet							
trans-1,2-Dichloroethene	0.7	U	1.0	ug/kg wet							
trans-1,3-Dichloropropene	0.4	U	1.0	ug/kg wet							
Trichloroethene	0.5	U	1.0	ug/kg wet							
Trichlorofluoromethane	0.5	U	1.0	ug/kg wet							
Vinyl chloride	0.4	U	1.0	ug/kg wet							
Xylenes (Total)	1.0	U	2.0	ug/kg wet							
4-Bromofluorobenzene	63			ug/kg wet	50.0		126	71-126			
Dibromofluoromethane	57			ug/kg wet	50.0		114	72-133			
Toluene-d8	55			ug/kg wet	50.0		110	80-123			

LCS (5K05023-BS1)

Prepared: 11/05/2015 00:00 Analyzed: 11/05/2015 09:47

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	14		1.0	ug/kg wet	20.0		71	22-166			
Benzene	15		1.0	ug/kg wet	20.0		75	49-142			
Chlorobenzene	17		1.0	ug/kg wet	20.0		85	45-147			
Toluene	15		1.0	ug/kg wet	20.0		74	55-136			
Trichloroethene	16		1.0	ug/kg wet	20.0		81	51-147			
4-Bromofluorobenzene	55			ug/kg wet	50.0		110	71-126			
Dibromofluoromethane	51			ug/kg wet	50.0		103	72-133			
Toluene-d8	50			ug/kg wet	50.0		100	80-123			

LCS Dup (5K05023-BSD1)

Prepared: 11/05/2015 00:00 Analyzed: 11/05/2015 10:15

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/kg wet	20.0		76	22-166	6	23	
Benzene	16		1.0	ug/kg wet	20.0		79	49-142	5	19	
Chlorobenzene	18		1.0	ug/kg wet	20.0		90	45-147	5	18	
Toluene	16		1.0	ug/kg wet	20.0		81	55-136	8	21	
Trichloroethene	17		1.0	ug/kg wet	20.0		85	51-147	5	26	
4-Bromofluorobenzene	62			ug/kg wet	50.0		124	71-126			
Dibromofluoromethane	59			ug/kg wet	50.0		118	72-133			
Toluene-d8	56			ug/kg wet	50.0		111	80-123			

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
ND	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact on the deviation.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal.
QS-03	Surrogate recovery outside acceptance limits
QS-04	Surrogate recovery not calculated. Surrogate diluted out of the calibration range.



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515

Monday, November 9, 2015

East Coast Environmental (EA030)

Attn: Tom Will

3815 Junction Blvd.

Raleigh, NC 27603

RE: Laboratory Results for

Project Number: [none], Project Name/Desc: Grocery Bag

ENCO Workorder(s): C513865

Dear Tom Will,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, October 29, 2015.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith For Bill Scott

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-8	Lab ID: C513865-01	Sampled: 10/29/15 12:15	Received: 10/29/15 16:30
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 624	11/12/15	11/03/15 16:46	11/05/15 22:08
Client ID: MW-8	Lab ID: C513865-01RE1	Sampled: 10/29/15 12:15	Received: 10/29/15 16:30
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 624	11/12/15	11/05/15 15:05	11/05/15 22:08
Client ID: MW-9	Lab ID: C513865-02RE1	Sampled: 10/29/15 12:30	Received: 10/29/15 16:30
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
SM 6200B-1997	11/12/15	11/03/15 16:46	11/06/15 19:52
Client ID: DW-1	Lab ID: C513865-03	Sampled: 10/29/15 12:45	Received: 10/29/15 16:30
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
EPA 6010C	04/26/16	11/02/15 13:59	11/04/15 14:20
MAVPH	11/12/15	11/02/15 10:49	11/03/15 12:15
SM 6200B-1997	11/12/15	11/05/15 15:05	11/05/15 21:11
Client ID: Pond	Lab ID: C513865-04	Sampled: 10/29/15 13:00	Received: 10/29/15 16:30
<u>Parameter</u>	<u>Hold Date/Time(s)</u>	<u>Prep Date/Time(s)</u>	<u>Analysis Date/Time(s)</u>
SM 6200B-1997	11/12/15	11/05/15 15:05	11/05/15 21:39

SAMPLE DETECTION SUMMARY

Client ID: MW-8

Lab ID: C513865-01RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Benzene	3100	D	7.5	50	ug/L	EPA 624	
Ethylbenzene	450	D	6.5	50	ug/L	EPA 624	
m,p-Xylenes	470	D	8.5	100	ug/L	EPA 624	
Methyl-tert-Butyl Ether	640	D	8.0	50	ug/L	EPA 624	
o-Xylene	42	JD	3.2	50	ug/L	EPA 624	
Toluene	60	D	7.0	50	ug/L	EPA 624	
Xylenes (Total)	510	D	12	150	ug/L	EPA 624	

Client ID: MW-9

Lab ID: C513865-02RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,3,5-Trimethylbenzene	1.3		0.10	1.0	ug/L	SM 6200B-1997	
Benzene	0.99	J	0.050	1.0	ug/L	SM 6200B-1997	
Ethylbenzene	1.0		0.10	1.0	ug/L	SM 6200B-1997	
Isopropyl Ether	2.9		0.21	1.0	ug/L	SM 6200B-1997	
Isopropylbenzene	14		0.13	1.0	ug/L	SM 6200B-1997	
m,p-Xylenes	3.8		0.18	2.0	ug/L	SM 6200B-1997	
Methyl-tert-Butyl Ether	5.6		0.12	1.0	ug/L	SM 6200B-1997	
Naphthalene	110		0.086	1.0	ug/L	SM 6200B-1997	
n-Propyl Benzene	22		0.073	1.0	ug/L	SM 6200B-1997	
o-Xylene	1.1		0.088	1.0	ug/L	SM 6200B-1997	
sec-Butylbenzene	2.0		0.053	1.0	ug/L	SM 6200B-1997	
Toluene	2.7		0.053	1.0	ug/L	SM 6200B-1997	
Xylenes (Total)	4.9		0.22	1.0	ug/L	SM 6200B-1997	

Client ID: DW-1

Lab ID: C513865-03

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,2,4-Trimethylbenzene	0.43	J	0.067	1.0	ug/L	SM 6200B-1997	
Bromodichloromethane	1.1		0.10	1.0	ug/L	SM 6200B-1997	
Chloroform	2.4		0.083	1.0	ug/L	SM 6200B-1997	
Lead - Total	20.7		3.10	10.0	ug/L	EPA 6010C	

Client ID: Pond

Lab ID: C513865-04

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Toluene	0.42	J	0.053	1.0	ug/L	SM 6200B-1997	

ANALYTICAL RESULTS

Description: MW-8

Lab Sample ID: C513865-01

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 12:15

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Benzene [71-43-2]^	3100	D	ug/L	50	7.5	50	5K05024	EPA 624	11/05/15 22:08	REF	
Ethylbenzene [100-41-4]^	450	D	ug/L	50	6.5	50	5K05024	EPA 624	11/05/15 22:08	REF	
Isopropyl Ether [108-20-3]^	ND		ug/L	50	2.7	50	5K05024	EPA 624	11/05/15 22:08	REF	
m,p-Xylenes [108-38-3/106-42-3]^	470	D	ug/L	50	8.5	100	5K05024	EPA 624	11/05/15 22:08	REF	
Methyl-tert-Butyl Ether [1634-04-4]^	640	D	ug/L	50	8.0	50	5K05024	EPA 624	11/05/15 22:08	REF	
o-Xylene [95-47-6]^	42	JD	ug/L	50	3.2	50	5K05024	EPA 624	11/05/15 22:08	REF	
Toluene [108-88-3]^	60	D	ug/L	50	7.0	50	5K05024	EPA 624	11/05/15 22:08	REF	
Xylenes (Total) [1330-20-7]^	510	D	ug/L	50	12	150	5K05024	EPA 624	11/05/15 22:08	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	44	1	50.0	88 %	53-136	5K05024	EPA 624	11/05/15 22:08	REF	
Dibromofluoromethane	44	1	50.0	87 %	67-129	5K05024	EPA 624	11/05/15 22:08	REF	
Toluene-d8	48	1	50.0	95 %	59-134	5K05024	EPA 624	11/05/15 22:08	REF	

Description: MW-9

Lab Sample ID: C513865-02

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 12:30

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/L	1	0.067	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,3,5-Trimethylbenzene [108-67-8]^	1.3		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Benzene [71-43-2]^	0.99	J	ug/L	1	0.050	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	

ANALYTICAL RESULTS

Description: MW-9

Lab Sample ID: C513865-02

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 12:30

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Ethylbenzene [100-41-4]^	1.0		ug/L	1	0.10	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Isopropyl Ether [108-20-3]^	2.9		ug/L	1	0.21	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Isopropylbenzene [98-82-8]^	14		ug/L	1	0.13	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
m,p-Xylenes [108-38-3/106-42-3]^	3.8		ug/L	1	0.18	2.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Methyl-tert-Butyl Ether [1634-04-4]^	5.6		ug/L	1	0.12	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Naphthalene [91-20-3]^	110		ug/L	1	0.086	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
n-Propyl Benzene [103-65-1]^	22		ug/L	1	0.073	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
o-Xylene [95-47-6]^	1.1		ug/L	1	0.088	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
sec-Butylbenzene [135-98-8]^	2.0		ug/L	1	0.053	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Toluene [108-88-3]^	2.7		ug/L	1	0.053	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Xylenes (Total) [1330-20-7]^	4.9		ug/L	1	0.22	1.0	5K06029	SM 6200B-1997	11/06/15 19:52	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	45	1	50.0	91 %	70-130	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Dibromofluoromethane	37	1	50.0	74 %	70-130	5K06029	SM 6200B-1997	11/06/15 19:52	REF	
Toluene-d8	45	1	50.0	89 %	70-130	5K06029	SM 6200B-1997	11/06/15 19:52	REF	

ANALYTICAL RESULTS

Description: DW-1

Lab Sample ID: C513865-03

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 12:45

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2,4-Trimethylbenzene [95-63-6]^	0.43	J	ug/L	1	0.067	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Benzene [71-43-2]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Bromodichloromethane [75-27-4]^	1.1		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Chloroform [67-66-3]^	2.4		ug/L	1	0.083	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Ethylbenzene [100-41-4]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Isopropyl Ether [108-20-3]^	ND		ug/L	1	0.21	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Isopropylbenzene [98-82-8]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
m,p-Xylenes [108-38-3/106-42-3]^	ND		ug/L	1	0.18	2.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	

ANALYTICAL RESULTS

Description: DW-1

Lab Sample ID: C513865-03

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 12:45

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/L	1	0.12	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Naphthalene [91-20-3]^	ND		ug/L	1	0.086	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
n-Propyl Benzene [103-65-1]^	ND		ug/L	1	0.073	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
o-Xylene [95-47-6]^	ND		ug/L	1	0.088	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
sec-Butylbenzene [135-98-8]^	ND		ug/L	1	0.053	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Toluene [108-88-3]^	ND		ug/L	1	0.053	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Xylenes (Total) [1330-20-7]^	ND		ug/L	1	0.22	1.0	5K05024	SM 6200B-1997	11/05/15 21:11	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	45	1	50.0	91 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Dibromofluoromethane	50	1	50.0	99 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:11	REF	
Toluene-d8	47	1	50.0	94 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:11	REF	

Volatile Petroleum Hydrocarbons by GC

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
C5-C8 Aliphatics^	ND		ug/L	1	4.7	30.0	5K02020	MAVPH	11/03/15 12:15	TAL	
C9-C10 Aromatics^	ND		ug/L	1	4.2	10	5K02020	MAVPH	11/03/15 12:15	TAL	
C9-C12 Aliphatics^	ND		ug/L	1	10.0	30.0	5K02020	MAVPH	11/03/15 12:15	TAL	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,5-Dibromotoluene (FID)	77.2	1	100	77 %	70-130	5K02020	MAVPH	11/03/15 12:15	TAL	
2,5-Dibromotoluene (PID)	110	1	100	107 %	70-130	5K02020	MAVPH	11/03/15 12:15	TAL	

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Lead [7439-92-1]^	20.7		ug/L	1	3.10	10.0	5K02032	EPA 6010C	11/04/15 14:20	JDH	

ANALYTICAL RESULTS

Description: Pond

Lab Sample ID: C513865-04

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 13:00

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6]^	ND		ug/L	1	0.091	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1,1-Trichloroethane [71-55-6]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1,2,2-Tetrachloroethane [79-34-5]^	ND		ug/L	1	0.085	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1,2-Trichloroethane [79-00-5]^	ND		ug/L	1	0.068	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1-Dichloroethane [75-34-3]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1-Dichloroethene [75-35-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,1-Dichloropropene [563-58-6]^	ND		ug/L	1	0.063	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2,3-Trichlorobenzene [87-61-6]^	ND		ug/L	1	0.25	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2,3-Trichloropropane [96-18-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2,4-Trichlorobenzene [120-82-1]^	ND		ug/L	1	0.097	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2,4-Trimethylbenzene [95-63-6]^	ND		ug/L	1	0.067	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2-Dibromo-3-chloropropane [96-12-8]^	ND		ug/L	1	0.48	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2-Dibromoethane [106-93-4]^	ND		ug/L	1	0.42	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2-Dichlorobenzene [95-50-1]^	ND		ug/L	1	0.052	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2-Dichloroethane [107-06-2]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,2-Dichloropropane [78-87-5]^	ND		ug/L	1	0.098	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,3,5-Trimethylbenzene [108-67-8]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,3-Dichlorobenzene [541-73-1]^	ND		ug/L	1	0.092	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,3-Dichloropropane [142-28-9]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
1,4-Dichlorobenzene [106-46-7]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
2,2-Dichloropropane [594-20-7]^	ND		ug/L	1	0.12	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
2-Chlorotoluene [95-49-8]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
4-Chlorotoluene [106-43-4]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
4-Isopropyltoluene [99-87-6]^	ND		ug/L	1	0.066	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Benzene [71-43-2]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Bromobenzene [108-86-1]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Bromochloromethane [74-97-5]^	ND		ug/L	1	0.11	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Bromodichloromethane [75-27-4]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Bromoform [75-25-2]^	ND		ug/L	1	0.20	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Bromomethane [74-83-9]^	ND		ug/L	1	0.28	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Carbon Tetrachloride [56-23-5]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Chlorobenzene [108-90-7]^	ND		ug/L	1	0.069	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Chloroethane [75-00-3]^	ND		ug/L	1	0.18	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Chloroform [67-66-3]^	ND		ug/L	1	0.083	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Chloromethane [74-87-3]^	ND		ug/L	1	0.050	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
cis-1,2-Dichloroethene [156-59-2]^	ND		ug/L	1	0.075	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
cis-1,3-Dichloropropene [10061-01-5]^	ND		ug/L	1	0.073	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Dibromochloromethane [124-48-1]^	ND		ug/L	1	0.067	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Dibromomethane [74-95-3]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Dichlorodifluoromethane [75-71-8]^	ND		ug/L	1	0.091	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Ethylbenzene [100-41-4]^	ND		ug/L	1	0.10	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Freon 113 [76-13-1]^	ND		ug/L	1	0.35	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Hexachlorobutadiene [87-68-3]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Isopropyl Ether [108-20-3]^	ND		ug/L	1	0.21	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Isopropylbenzene [98-82-8]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
m,p-Xylenes [108-38-3/106-42-3]^	ND		ug/L	1	0.18	2.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Methylene Chloride [75-09-2]^	ND		ug/L	1	0.070	2.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	

ANALYTICAL RESULTS

Description: Pond

Lab Sample ID: C513865-04

Received: 10/29/15 16:30

Matrix: Water

Sampled: 10/29/15 13:00

Work Order: C513865

Project: Grocery Bag

Sampled By: Thomas Will

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Methyl-tert-Butyl Ether [1634-04-4]^	ND		ug/L	1	0.12	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Naphthalene [91-20-3]^	ND		ug/L	1	0.086	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
n-Butyl Benzene [104-51-8]^	ND		ug/L	1	0.074	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
n-Propyl Benzene [103-65-1]^	ND		ug/L	1	0.073	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
o-Xylene [95-47-6]^	ND		ug/L	1	0.088	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
sec-Butylbenzene [135-98-8]^	ND		ug/L	1	0.053	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Styrene [100-42-5]^	ND		ug/L	1	0.082	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
tert-Butylbenzene [98-06-6]^	ND		ug/L	1	0.094	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Tetrachloroethene [127-18-4]^	ND		ug/L	1	0.099	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Toluene [108-88-3]^	0.42	J	ug/L	1	0.053	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
trans-1,2-Dichloroethene [156-60-5]^	ND		ug/L	1	0.11	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
trans-1,3-Dichloropropene [10061-02-6]^	ND		ug/L	1	0.080	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Trichloroethene [79-01-6]^	ND		ug/L	1	0.13	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Trichlorofluoromethane [75-69-4]^	ND		ug/L	1	0.15	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Vinyl chloride [75-01-4]^	ND		ug/L	1	0.083	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Xylenes (Total) [1330-20-7]^	ND		ug/L	1	0.22	1.0	5K05024	SM 6200B-1997	11/05/15 21:39	REF	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	46	1	50.0	92 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Dibromofluoromethane	49	1	50.0	98 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:39	REF	
Toluene-d8	48	1	50.0	95 %	70-130	5K05024	SM 6200B-1997	11/05/15 21:39	REF	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS

Blank (5K05024-BLK1)

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 11:39

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Benzene	0.15	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Ethylbenzene	0.13	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.17	U	2.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

Blank (5K05024-BLK1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 11:39

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Methyl-tert-Butyl Ether	0.16	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.065	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
Toluene	0.14	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
Xylenes (Total)	0.24	U	3.0	ug/L							
<hr/>											
1,2-Dichloroethane-d4	44			ug/L	50.0		88	56-161			
4-Bromofluorobenzene	45			ug/L	50.0		91	53-136			
4-Bromofluorobenzene	45			ug/L	50.0		91	70-130			
Dibromofluoromethane	47			ug/L	50.0		93	67-129			
Dibromofluoromethane	47			ug/L	50.0		93	70-130			
Toluene-d8	47			ug/L	50.0		94	59-134			
Toluene-d8	47			ug/L	50.0		94	70-130			

LCS (5K05024-BS1)

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 13:58

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0		106	70-130			
1,1,1-Trichloroethane	20		1.0	ug/L	20.0		99	70-130			
1,1,2,2-Tetrachloroethane	20		1.0	ug/L	20.0		100	70-130			
1,1,2-Trichloroethane	21		1.0	ug/L	20.0		103	70-130			
1,1-Dichloroethane	20		1.0	ug/L	20.0		98	70-130			
1,1-Dichloroethene	17		1.0	ug/L	20.0		87	70-130			
1,1-Dichloropropene	20		1.0	ug/L	20.0		101	70-130			
1,2,3-Trichlorobenzene	20		1.0	ug/L	20.0		99	70-130			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0		92	70-130			
1,2,4-Trichlorobenzene	17		1.0	ug/L	20.0		84	70-130			
1,2,4-Trimethylbenzene	25		1.0	ug/L	20.0		123	70-130			
1,2-Dibromo-3-chloropropane	19		1.0	ug/L	20.0		95	70-130			
1,2-Dibromoethane	20		1.0	ug/L	20.0		101	70-130			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0		110	70-130			
1,2-Dichloroethane	18		1.0	ug/L	20.0		91	70-130			
1,2-Dichloropropane	20		1.0	ug/L	20.0		99	70-130			
1,3,5-Trimethylbenzene	24		1.0	ug/L	20.0		120	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

LCS (5K05024-BS1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 13:58

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,3-Dichlorobenzene	23		1.0	ug/L	20.0		114	70-130			
1,3-Dichloropropane	19		1.0	ug/L	20.0		96	70-130			
1,4-Dichlorobenzene	23		1.0	ug/L	20.0		113	70-130			
2,2-Dichloropropane	21		1.0	ug/L	20.0		103	70-130			
2-Chlorotoluene	24		1.0	ug/L	20.0		121	70-130			
4-Chlorotoluene	23		1.0	ug/L	20.0		117	70-130			
4-Isopropyltoluene	25		1.0	ug/L	20.0		123	70-130			
Benzene	21		1.0	ug/L	20.0		104	37-151			
Benzene	21		1.0	ug/L	20.0		104	70-130			
Bromobenzene	20		1.0	ug/L	20.0		102	70-130			
Bromochloromethane	19		1.0	ug/L	20.0		95	70-130			
Bromodichloromethane	20		1.0	ug/L	20.0		100	70-130			
Bromoform	19		1.0	ug/L	20.0		94	70-130			
Bromomethane	22		1.0	ug/L	20.0		109	60-140			
Carbon Tetrachloride	22		1.0	ug/L	20.0		109	70-130			
Chlorobenzene	22		1.0	ug/L	20.0		110	70-130			
Chloroethane	23		1.0	ug/L	20.0		113	60-140			
Chloroform	19		1.0	ug/L	20.0		95	70-130			
Chloromethane	21		1.0	ug/L	20.0		107	60-140			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0		89	70-130			
cis-1,3-Dichloropropene	21		1.0	ug/L	20.0		103	70-130			
Dibromochloromethane	21		1.0	ug/L	20.0		106	70-130			
Dibromomethane	18		1.0	ug/L	20.0		92	70-130			
Dichlorodifluoromethane	25		1.0	ug/L	20.0		126	60-140			
Ethylbenzene	20		1.0	ug/L	20.0		100	37-162			
Ethylbenzene	20		1.0	ug/L	20.0		100	70-130			
Freon 113	41		1.0	ug/L	40.0		102	70-130			
Hexachlorobutadiene	21		1.0	ug/L	20.0		103	70-130			
Isopropyl Ether	14		1.0	ug/L	20.0		72	45-117			
Isopropyl Ether	14		1.0	ug/L	20.0		72	70-130			
Isopropylbenzene	23		1.0	ug/L	20.0		116	70-130			
m,p-Xylenes	43		2.0	ug/L	40.0		108	70-130			
m,p-Xylenes	43		2.0	ug/L	40.0		108	79-121			
Methylene Chloride	17		2.0	ug/L	20.0		86	70-130			
Methyl-tert-Butyl Ether	14		1.0	ug/L	20.0		71	10-127			
Methyl-tert-Butyl Ether	14		1.0	ug/L	20.0		71	70-130			
Naphthalene	16		1.0	ug/L	20.0		78	70-130			
n-Butyl Benzene	25		1.0	ug/L	20.0		124	70-130			
n-Propyl Benzene	26		1.0	ug/L	20.0		128	70-130			
o-Xylene	23		1.0	ug/L	20.0		113	70-130			
o-Xylene	23		1.0	ug/L	20.0		113	71-125			
sec-Butylbenzene	25		1.0	ug/L	20.0		125	70-130			
Styrene	23		1.0	ug/L	20.0		114	70-130			
tert-Butylbenzene	24		1.0	ug/L	20.0		118	70-130			
Tetrachloroethene	22		1.0	ug/L	20.0		110	70-130			
Toluene	24		1.0	ug/L	20.0		118	47-150			
Toluene	24		1.0	ug/L	20.0		118	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		96	70-130			
trans-1,3-Dichloropropene	22		1.0	ug/L	20.0		111	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

LCS (5K05024-BS1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 13:58

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichloroethene	20		1.0	ug/L	20.0		100	70-130			
Trichlorofluoromethane	23		1.0	ug/L	20.0		113	60-140			
Vinyl chloride	23		1.0	ug/L	20.0		117	60-140			
Xylenes (Total)	66		1.0	ug/L	60.0		110	70-130			
Xylenes (Total)	66		3.0	ug/L	60.0		110	77-121			
1,2-Dichloroethane-d4	39			ug/L	50.0		78	56-161			
4-Bromofluorobenzene	47			ug/L	50.0		94	53-136			
4-Bromofluorobenzene	47			ug/L	50.0		94	70-130			
Dibromofluoromethane	44			ug/L	50.0		88	67-129			
Dibromofluoromethane	44			ug/L	50.0		88	70-130			
Toluene-d8	47			ug/L	50.0		95	59-134			
Toluene-d8	47			ug/L	50.0		95	70-130			

Matrix Spike (5K05024-MS1)

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 13:01

Source: C514140-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.091 U	96	71-117			
1,1,1-Trichloroethane	17		1.0	ug/L	20.0	0.15 U	83	72-143			
1,1,2,2-Tetrachloroethane	16		1.0	ug/L	20.0	0.085 U	79	59-133			
1,1,2-Trichloroethane	17		1.0	ug/L	20.0	0.068 U	86	67-118			
1,1-Dichloroethane	18		1.0	ug/L	20.0	0.050 U	88	79-141			
1,1-Dichloroethene	14		1.0	ug/L	20.0	0.15 U	71	75-133			QM-07
1,1-Dichloropropene	17		1.0	ug/L	20.0	0.063 U	83	70-129			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.25 U	83	62-117			
1,2,3-Trichloropropane	15		1.0	ug/L	20.0	0.15 U	75	58-140			
1,2,4-Trichlorobenzene	14		1.0	ug/L	20.0	0.097 U	71	59-122			
1,2,4-Trimethylbenzene	22		1.0	ug/L	20.0	0.067 U	108	74-123			
1,2-Dibromo-3-chloropropane	15		1.0	ug/L	20.0	0.48 U	73	37-157			
1,2-Dibromoethane	16		1.0	ug/L	20.0	0.42 U	82	66-123			
1,2-Dichlorobenzene	19		1.0	ug/L	20.0	0.052 U	94	76-116			
1,2-Dichloroethane	16		1.0	ug/L	20.0	0.082 U	80	72-151			
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	87	78-125			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0	0.10 U	104	77-129			
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	100	76-119			
1,3-Dichloropropane	16		1.0	ug/L	20.0	0.15 U	82	60-129			
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	99	76-122			
2,2-Dichloropropane	17		1.0	ug/L	20.0	0.12 U	86	21-167			
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	105	73-135			
4-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	103	76-134			
4-Isopropyltoluene	21		1.0	ug/L	20.0	0.066 U	105	75-127			
Benzene	18		1.0	ug/L	20.0	0.15 U	91	37-151			
Benzene	18		1.0	ug/L	20.0	0.050 U	91	81-134			
Bromobenzene	17		1.0	ug/L	20.0	0.13 U	87	72-115			
Bromochloromethane	17		1.0	ug/L	20.0	0.11 U	86	74-128			
Bromodichloromethane	18		1.0	ug/L	20.0	0.10 U	88	72-129			
Bromoform	16		1.0	ug/L	20.0	0.20 U	78	73-119			
Bromomethane	19		1.0	ug/L	20.0	0.28 U	96	38-189			
Carbon Tetrachloride	18		1.0	ug/L	20.0	0.082 U	91	68-142			
Chlorobenzene	20		1.0	ug/L	20.0	0.069 U	100	83-117			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

Matrix Spike (5K05024-MS1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 13:01

Source: C514140-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	20		1.0	ug/L	20.0	0.18 U	99	45-213			
Chloroform	17		1.0	ug/L	20.0	0.083 U	85	78-138			
Chloromethane	18		1.0	ug/L	20.0	0.050 U	91	56-171			
cis-1,2-Dichloroethene	15		1.0	ug/L	20.0	0.075 U	75	69-120			
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	90	63-125			
Dibromochloromethane	18		1.0	ug/L	20.0	0.067 U	91	73-117			
Dibromomethane	16		1.0	ug/L	20.0	0.13 U	79	76-124			
Dichlorodifluoromethane	21		1.0	ug/L	20.0	0.091 U	106	25-161			
Ethylbenzene	17		1.0	ug/L	20.0	0.13 U	86	37-162			
Ethylbenzene	17		1.0	ug/L	20.0	0.10 U	86	68-124			
Freon 113	35		1.0	ug/L	40.0	0.35 U	87	0-200			
Hexachlorobutadiene	17		1.0	ug/L	20.0	0.15 U	87	63-114			
Isopropyl Ether	12		1.0	ug/L	20.0	0.054 U	62	45-117			
Isopropyl Ether	12		1.0	ug/L	20.0	0.21 U	62	70-130			QM-07
Isopropylbenzene	20		1.0	ug/L	20.0	0.13 U	100	81-136			
m,p-Xylenes	38		2.0	ug/L	40.0	0.17 U	94	79-121			
m,p-Xylenes	38		2.0	ug/L	40.0	0.18 U	94	79-121			
Methylene Chloride	15		2.0	ug/L	20.0	0.070 U	73	68-128			
Methyl-tert-Butyl Ether	12		1.0	ug/L	20.0	0.12 U	58	10-127			
Methyl-tert-Butyl Ether	12		1.0	ug/L	20.0	0.16 U	58	10-127			
Naphthalene	12		1.0	ug/L	20.0	0.086 U	59	50-127			
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	106	68-126			
n-Propyl Benzene	22		1.0	ug/L	20.0	0.073 U	110	76-125			
o-Xylene	20		1.0	ug/L	20.0	0.065 U	98	71-125			
o-Xylene	20		1.0	ug/L	20.0	0.088 U	98	71-125			
sec-Butylbenzene	21		1.0	ug/L	20.0	0.053 U	107	75-122			
Styrene	20		1.0	ug/L	20.0	0.082 U	100	73-120			
tert-Butylbenzene	20		1.0	ug/L	20.0	0.094 U	101	70-137			
Tetrachloroethene	19		1.0	ug/L	20.0	0.099 U	96	40-181			
Toluene	21		1.0	ug/L	20.0	0.14 U	104	47-150			
Toluene	21		1.0	ug/L	20.0	0.053 U	104	71-118			
trans-1,2-Dichloroethene	16		1.0	ug/L	20.0	0.11 U	82	75-139			
trans-1,3-Dichloropropene	19		1.0	ug/L	20.0	0.080 U	96	62-152			
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	89	75-115			
Trichlorofluoromethane	20		1.0	ug/L	20.0	0.15 U	98	68-183			
Vinyl chloride	20		1.0	ug/L	20.0	0.083 U	98	49-150			
Xylenes (Total)	57		1.0	ug/L	60.0	0.22 U	95	77-121			
Xylenes (Total)	57		3.0	ug/L	60.0	0.24 U	95	77-121			
1,2-Dichloroethane-d4	37			ug/L	50.0		74	56-161			
4-Bromofluorobenzene	46			ug/L	50.0		93	53-136			
4-Bromofluorobenzene	46			ug/L	50.0		93	70-130			
Dibromofluoromethane	43			ug/L	50.0		86	67-129			
Dibromofluoromethane	43			ug/L	50.0		86	70-130			
Toluene-d8	47			ug/L	50.0		94	59-134			
Toluene-d8	47			ug/L	50.0		94	70-130			

Matrix Spike Dup (5K05024-MSD1)

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 14:27

Source: C514140-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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FINAL

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

Matrix Spike Dup (5K05024-MSD1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 14:27

Source: C514140-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	102	71-117	6	16	
1,1,1-Trichloroethane	20		1.0	ug/L	20.0	0.15 U	98	72-143	16	18	
1,1,2,2-Tetrachloroethane	19		1.0	ug/L	20.0	0.085 U	96	59-133	19	16	QR-02
1,1,2-Trichloroethane	21		1.0	ug/L	20.0	0.068 U	103	67-118	17	18	
1,1-Dichloroethane	20		1.0	ug/L	20.0	0.050 U	99	79-141	12	19	
1,1-Dichloroethene	17		1.0	ug/L	20.0	0.15 U	86	75-133	19	20	
1,1-Dichloropropene	19		1.0	ug/L	20.0	0.063 U	97	70-129	16	17	
1,2,3-Trichlorobenzene	19		1.0	ug/L	20.0	0.25 U	97	62-117	16	17	
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	97	58-140	26	17	QR-02
1,2,4-Trichlorobenzene	16		1.0	ug/L	20.0	0.097 U	80	59-122	12	17	
1,2,4-Trimethylbenzene	24		1.0	ug/L	20.0	0.067 U	118	74-123	9	18	
1,2-Dibromo-3-chloropropane	18		1.0	ug/L	20.0	0.48 U	89	37-157	21	18	QR-02
1,2-Dibromoethane	20		1.0	ug/L	20.0	0.42 U	99	66-123	19	15	QR-02
1,2-Dichlorobenzene	21		1.0	ug/L	20.0	0.052 U	104	76-116	9	16	
1,2-Dichloroethane	17		1.0	ug/L	20.0	0.082 U	87	72-151	8	16	
1,2-Dichloropropane	19		1.0	ug/L	20.0	0.098 U	93	78-125	7	19	
1,3,5-Trimethylbenzene	23		1.0	ug/L	20.0	0.10 U	115	77-129	10	16	
1,3-Dichlorobenzene	22		1.0	ug/L	20.0	0.092 U	109	76-119	8	17	
1,3-Dichloropropane	19		1.0	ug/L	20.0	0.15 U	96	60-129	15	16	
1,4-Dichlorobenzene	22		1.0	ug/L	20.0	0.10 U	109	76-122	9	16	
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	101	21-167	16	20	
2-Chlorotoluene	23		1.0	ug/L	20.0	0.10 U	115	73-135	9	16	
4-Chlorotoluene	23		1.0	ug/L	20.0	0.10 U	114	76-134	9	16	
4-Isopropyltoluene	24		1.0	ug/L	20.0	0.066 U	120	75-127	13	17	
Benzene	20		1.0	ug/L	20.0	0.15 U	100	37-151	9	25	
Benzene	20		1.0	ug/L	20.0	0.050 U	100	81-134	9	17	
Bromobenzene	20		1.0	ug/L	20.0	0.13 U	100	72-115	14	17	
Bromochloromethane	19		1.0	ug/L	20.0	0.11 U	95	74-128	10	18	
Bromodichloromethane	20		1.0	ug/L	20.0	0.10 U	99	72-129	11	16	
Bromoform	18		1.0	ug/L	20.0	0.20 U	91	73-119	16	44	
Bromomethane	22		1.0	ug/L	20.0	0.28 U	111	38-189	15	27	
Carbon Tetrachloride	21		1.0	ug/L	20.0	0.082 U	106	68-142	15	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	107	83-117	7	16	
Chloroethane	23		1.0	ug/L	20.0	0.18 U	117	45-213	17	26	
Chloroform	19		1.0	ug/L	20.0	0.083 U	94	78-138	10	17	
Chloromethane	22		1.0	ug/L	20.0	0.050 U	111	56-171	19	28	
cis-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.075 U	85	69-120	13	18	
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0	0.073 U	102	63-125	12	17	
Dibromochloromethane	21		1.0	ug/L	20.0	0.067 U	103	73-117	12	16	
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	91	76-124	14	15	
Dichlorodifluoromethane	25		1.0	ug/L	20.0	0.091 U	126	25-161	17	48	
Ethylbenzene	20		1.0	ug/L	20.0	0.13 U	99	37-162	13	25	
Ethylbenzene	20		1.0	ug/L	20.0	0.10 U	99	68-124	13	16	
Freon 113	39		1.0	ug/L	40.0	0.35 U	97	0-200	11	25	
Hexachlorobutadiene	20		1.0	ug/L	20.0	0.15 U	98	63-114	11	19	
Isopropyl Ether	14		1.0	ug/L	20.0	0.054 U	70	45-117	12	25	
Isopropyl Ether	14		1.0	ug/L	20.0	0.21 U	70	70-130	12	30	
Isopropylbenzene	23		1.0	ug/L	20.0	0.13 U	114	81-136	14	16	
m,p-Xylenes	42		2.0	ug/L	40.0	0.18 U	105	79-121	10	16	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K05024 - EPA 5030B_MS - Continued

Matrix Spike Dup (5K05024-MSD1) Continued

Prepared: 11/05/2015 09:37 Analyzed: 11/05/2015 14:27

Source: C514140-06

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
m,p-Xylenes	42		2.0	ug/L	40.0	0.17 U	105	79-121	10	25	
Methylene Chloride	18		2.0	ug/L	20.0	0.070 U	88	68-128	18	17	QR-02
Methyl-tert-Butyl Ether	14		1.0	ug/L	20.0	0.12 U	70	10-127	19	21	
Methyl-tert-Butyl Ether	14		1.0	ug/L	20.0	0.16 U	70	10-127	19	25	
Naphthalene	16		1.0	ug/L	20.0	0.086 U	80	50-127	31	19	QR-02
n-Butyl Benzene	24		1.0	ug/L	20.0	0.074 U	119	68-126	12	15	
n-Propyl Benzene	25		1.0	ug/L	20.0	0.073 U	124	76-125	12	16	
o-Xylene	22		1.0	ug/L	20.0	0.088 U	110	71-125	12	15	
o-Xylene	22		1.0	ug/L	20.0	0.065 U	110	71-125	12	25	
sec-Butylbenzene	24		1.0	ug/L	20.0	0.053 U	121	75-122	12	17	
Styrene	22		1.0	ug/L	20.0	0.082 U	111	73-120	10	23	
tert-Butylbenzene	23		1.0	ug/L	20.0	0.094 U	114	70-137	12	22	
Tetrachloroethene	22		1.0	ug/L	20.0	0.099 U	109	40-181	13	26	
Toluene	23		1.0	ug/L	20.0	0.14 U	114	47-150	9	25	
Toluene	23		1.0	ug/L	20.0	0.053 U	114	71-118	9	17	
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0	0.11 U	96	75-139	15	19	
trans-1,3-Dichloropropene	22		1.0	ug/L	20.0	0.080 U	112	62-152	16	16	
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	98	75-115	10	18	
Trichlorofluoromethane	23		1.0	ug/L	20.0	0.15 U	114	68-183	14	22	
Vinyl chloride	25		1.0	ug/L	20.0	0.083 U	123	49-150	22	27	
Xylenes (Total)	64		1.0	ug/L	60.0	0.22 U	107	77-121	11	16	
Xylenes (Total)	64		3.0	ug/L	60.0	0.24 U	107	77-121	11	16	
1,2-Dichloroethane-d4	41			ug/L	50.0		82	56-161			
4-Bromofluorobenzene	48			ug/L	50.0		96	53-136			
4-Bromofluorobenzene	48			ug/L	50.0		96	70-130			
Dibromofluoromethane	45			ug/L	50.0		90	67-129			
Dibromofluoromethane	45			ug/L	50.0		90	70-130			
Toluene-d8	47			ug/L	50.0		94	59-134			
Toluene-d8	47			ug/L	50.0		94	70-130			

Batch 5K06029 - EPA 5030B_MS

Blank (5K06029-BLK1)

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 13:09

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,1-Dichloropropene	0.063	U	1.0	ug/L							
1,2,3-Trichlorobenzene	0.25	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2,4-Trichlorobenzene	0.097	U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.067	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

Blank (5K06029-BLK1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 13:09

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.10	U	1.0	ug/L							
1,3-Dichlorobenzene	0.092	U	1.0	ug/L							
1,3-Dichloropropane	0.15	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2,2-Dichloropropane	0.12	U	1.0	ug/L							
2-Chlorotoluene	0.10	U	1.0	ug/L							
4-Chlorotoluene	0.10	U	1.0	ug/L							
4-Isopropyltoluene	0.066	U	1.0	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromobenzene	0.13	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon Tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Dichlorodifluoromethane	0.091	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Freon 113	0.35	U	1.0	ug/L							
Hexachlorobutadiene	0.15	U	1.0	ug/L							
Isopropyl Ether	0.21	U	1.0	ug/L							
Isopropylbenzene	0.13	U	1.0	ug/L							
m,p-Xylenes	0.18	U	2.0	ug/L							
Methylene Chloride	0.070	U	2.0	ug/L							
Methyl-tert-Butyl Ether	0.12	U	1.0	ug/L							
Naphthalene	0.086	U	1.0	ug/L							
n-Butyl Benzene	0.074	U	1.0	ug/L							
n-Propyl Benzene	0.073	U	1.0	ug/L							
o-Xylene	0.088	U	1.0	ug/L							
sec-Butylbenzene	0.053	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
tert-Butylbenzene	0.094	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

Blank (5K06029-BLK1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 13:09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4-Bromofluorobenzene	45			ug/L	50.0		90	70-130			
Dibromofluoromethane	48			ug/L	50.0		96	70-130			
Toluene-d8	46			ug/L	50.0		92	70-130			

LCS (5K06029-BS1)

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 16:01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0		104	70-130			
1,1,1-Trichloroethane	19		1.0	ug/L	20.0		95	70-130			
1,1,2,2-Tetrachloroethane	21		1.0	ug/L	20.0		104	70-130			
1,1,2-Trichloroethane	21		1.0	ug/L	20.0		103	70-130			
1,1-Dichloroethane	20		1.0	ug/L	20.0		100	70-130			
1,1-Dichloroethene	17		1.0	ug/L	20.0		85	70-130			
1,1-Dichloropropene	18		1.0	ug/L	20.0		92	70-130			
1,2,3-Trichlorobenzene	21		1.0	ug/L	20.0		106	70-130			
1,2,3-Trichloropropane	20		1.0	ug/L	20.0		102	70-130			
1,2,4-Trichlorobenzene	18		1.0	ug/L	20.0		88	70-130			
1,2,4-Trimethylbenzene	24		1.0	ug/L	20.0		119	70-130			
1,2-Dibromo-3-chloropropane	21		1.0	ug/L	20.0		103	70-130			
1,2-Dibromoethane	20		1.0	ug/L	20.0		101	70-130			
1,2-Dichlorobenzene	22		1.0	ug/L	20.0		109	70-130			
1,2-Dichloroethane	18		1.0	ug/L	20.0		91	70-130			
1,2-Dichloropropane	19		1.0	ug/L	20.0		97	70-130			
1,3,5-Trimethylbenzene	23		1.0	ug/L	20.0		113	70-130			
1,3-Dichlorobenzene	22		1.0	ug/L	20.0		110	70-130			
1,3-Dichloropropane	20		1.0	ug/L	20.0		98	70-130			
1,4-Dichlorobenzene	22		1.0	ug/L	20.0		111	70-130			
2,2-Dichloropropane	20		1.0	ug/L	20.0		98	70-130			
2-Chlorotoluene	23		1.0	ug/L	20.0		113	70-130			
4-Chlorotoluene	22		1.0	ug/L	20.0		112	70-130			
4-Isopropyltoluene	23		1.0	ug/L	20.0		114	70-130			
Benzene	21		1.0	ug/L	20.0		104	70-130			
Bromobenzene	20		1.0	ug/L	20.0		100	70-130			
Bromochloromethane	20		1.0	ug/L	20.0		98	70-130			
Bromodichloromethane	20		1.0	ug/L	20.0		98	70-130			
Bromoform	19		1.0	ug/L	20.0		97	70-130			
Bromomethane	19		1.0	ug/L	20.0		96	60-140			
Carbon Tetrachloride	20		1.0	ug/L	20.0		98	70-130			
Chlorobenzene	22		1.0	ug/L	20.0		108	70-130			
Chloroethane	19		1.0	ug/L	20.0		95	60-140			
Chloroform	19		1.0	ug/L	20.0		94	70-130			
Chloromethane	17		1.0	ug/L	20.0		86	60-140			
cis-1,2-Dichloroethene	18		1.0	ug/L	20.0		88	70-130			
cis-1,3-Dichloropropene	20		1.0	ug/L	20.0		101	70-130			
Dibromochloromethane	21		1.0	ug/L	20.0		107	70-130			
Dibromomethane	19		1.0	ug/L	20.0		97	70-130			
Dichlorodifluoromethane	17		1.0	ug/L	20.0		83	60-140			
Ethylbenzene	19		1.0	ug/L	20.0		95	70-130			
Freon 113	38		1.0	ug/L	40.0		95	70-130			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

LCS (5K06029-BS1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 16:01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Hexachlorobutadiene	19		1.0	ug/L	20.0		95	70-130			
Isopropyl Ether	17		1.0	ug/L	20.0		86	70-130			
Isopropylbenzene	21		1.0	ug/L	20.0		107	70-130			
m,p-Xylenes	41		2.0	ug/L	40.0		102	70-130			
Methylene Chloride	18		2.0	ug/L	20.0		89	70-130			
Methyl-tert-Butyl Ether	18		1.0	ug/L	20.0		88	70-130			
Naphthalene	17		1.0	ug/L	20.0		85	70-130			
n-Butyl Benzene	23		1.0	ug/L	20.0		115	70-130			
n-Propyl Benzene	24		1.0	ug/L	20.0		118	70-130			
o-Xylene	22		1.0	ug/L	20.0		108	70-130			
sec-Butylbenzene	23		1.0	ug/L	20.0		113	70-130			
Styrene	22		1.0	ug/L	20.0		108	70-130			
tert-Butylbenzene	22		1.0	ug/L	20.0		109	70-130			
Tetrachloroethene	20		1.0	ug/L	20.0		102	70-130			
Toluene	22		1.0	ug/L	20.0		112	70-130			
trans-1,2-Dichloroethene	19		1.0	ug/L	20.0		94	70-130			
trans-1,3-Dichloropropene	22		1.0	ug/L	20.0		112	70-130			
Trichloroethene	19		1.0	ug/L	20.0		97	70-130			
Trichlorofluoromethane	18		1.0	ug/L	20.0		91	60-140			
Vinyl chloride	18		1.0	ug/L	20.0		88	60-140			
Xylenes (Total)	62		1.0	ug/L	60.0		104	70-130			
4-Bromofluorobenzene	46			ug/L	50.0		92	70-130			
Dibromofluoromethane	44			ug/L	50.0		88	70-130			
Toluene-d8	47			ug/L	50.0		95	70-130			

Matrix Spike (5K06029-MS1)

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:06

Source: C511919-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	20		1.0	ug/L	20.0	0.091 U	98	71-117			
1,1,1-Trichloroethane	18		1.0	ug/L	20.0	0.15 U	90	72-143			
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	92	59-133			
1,1,2-Trichloroethane	19		1.0	ug/L	20.0	0.068 U	95	67-118			
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	95	79-141			
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.15 U	78	75-133			
1,1-Dichloropropene	18		1.0	ug/L	20.0	0.063 U	90	70-129			
1,2,3-Trichlorobenzene	17		1.0	ug/L	20.0	0.25 U	84	62-117			
1,2,3-Trichloropropane	18		1.0	ug/L	20.0	0.15 U	88	58-140			
1,2,4-Trichlorobenzene	14		1.0	ug/L	20.0	0.097 U	70	59-122			
1,2,4-Trimethylbenzene	22		1.0	ug/L	20.0	0.067 U	109	74-123			
1,2-Dibromo-3-chloropropane	17		1.0	ug/L	20.0	0.48 U	85	37-157			
1,2-Dibromoethane	18		1.0	ug/L	20.0	0.42 U	92	66-123			
1,2-Dichlorobenzene	19		1.0	ug/L	20.0	0.052 U	96	76-116			
1,2-Dichloroethane	16		1.0	ug/L	20.0	0.082 U	80	72-151			
1,2-Dichloropropane	18		1.0	ug/L	20.0	0.098 U	89	78-125			
1,3,5-Trimethylbenzene	21		1.0	ug/L	20.0	0.10 U	104	77-129			
1,3-Dichlorobenzene	20		1.0	ug/L	20.0	0.092 U	99	76-119			
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	89	60-129			
1,4-Dichlorobenzene	20		1.0	ug/L	20.0	0.10 U	99	76-122			
2,2-Dichloropropane	19		1.0	ug/L	20.0	0.12 U	94	71-167			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

Matrix Spike (5K06029-MS1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:06

Source: C511919-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	105	73-135			
4-Chlorotoluene	21		1.0	ug/L	20.0	0.10 U	103	76-134			
4-Isopropyltoluene	21		1.0	ug/L	20.0	0.066 U	106	75-127			
Benzene	19		1.0	ug/L	20.0	0.050 U	95	81-134			
Bromobenzene	19		1.0	ug/L	20.0	0.13 U	94	72-115			
Bromochloromethane	17		1.0	ug/L	20.0	0.11 U	87	74-128			
Bromodichloromethane	18		1.0	ug/L	20.0	0.10 U	92	72-129			
Bromoform	16		1.0	ug/L	20.0	0.20 U	82	73-119			
Bromomethane	21		1.0	ug/L	20.0	0.28 U	103	38-189			
Carbon Tetrachloride	20		1.0	ug/L	20.0	0.082 U	100	68-142			
Chlorobenzene	20		1.0	ug/L	20.0	0.069 U	102	83-117			
Chloroethane	22		1.0	ug/L	20.0	0.18 U	110	45-213			
Chloroform	18		1.0	ug/L	20.0	0.083 U	90	78-138			
Chloromethane	21		1.0	ug/L	20.0	0.050 U	105	56-171			
cis-1,2-Dichloroethene	16		1.0	ug/L	20.0	0.075 U	79	69-120			
cis-1,3-Dichloropropene	17		1.0	ug/L	20.0	0.073 U	86	63-125			
Dibromochloromethane	19		1.0	ug/L	20.0	0.067 U	97	73-117			
Dibromomethane	17		1.0	ug/L	20.0	0.13 U	86	76-124			
Dichlorodifluoromethane	23		1.0	ug/L	20.0	0.091 U	114	25-161			
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	89	68-124			
Freon 113	43		1.0	ug/L	40.0	0.35 U	109	0-200			
Hexachlorobutadiene	18		1.0	ug/L	20.0	0.15 U	92	63-114			
Isopropyl Ether	12		1.0	ug/L	20.0	0.21 U	62	70-130			QM-07
Isopropylbenzene	21		1.0	ug/L	20.0	0.13 U	104	81-136			
m,p-Xylenes	39		2.0	ug/L	40.0	0.18 U	97	79-121			
Methylene Chloride	15		2.0	ug/L	20.0	0.070 U	75	68-128			
Methyl-tert-Butyl Ether	13		1.0	ug/L	20.0	0.12 U	64	10-127			
Naphthalene	14		1.0	ug/L	20.0	0.086 U	71	50-127			
n-Butyl Benzene	21		1.0	ug/L	20.0	0.074 U	107	68-126			
n-Propyl Benzene	23		1.0	ug/L	20.0	0.073 U	115	76-125			
o-Xylene	20		1.0	ug/L	20.0	0.088 U	101	71-125			
sec-Butylbenzene	22		1.0	ug/L	20.0	0.053 U	109	75-122			
Styrene	20		1.0	ug/L	20.0	0.082 U	101	73-120			
tert-Butylbenzene	20		1.0	ug/L	20.0	0.094 U	102	70-137			
Tetrachloroethene	20		1.0	ug/L	20.0	0.099 U	100	40-181			
Toluene	21		1.0	ug/L	20.0	0.053 U	106	71-118			
trans-1,2-Dichloroethene	17		1.0	ug/L	20.0	0.11 U	87	75-139			
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	104	62-152			
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	90	75-115			
Trichlorofluoromethane	22		1.0	ug/L	20.0	0.15 U	112	68-183			
Vinyl chloride	23		1.0	ug/L	20.0	0.083 U	116	49-150			
Xylenes (Total)	59		1.0	ug/L	60.0	0.22 U	99	77-121			
4-Bromofluorobenzene	47			ug/L	50.0		94	70-130			
Dibromofluoromethane	45			ug/L	50.0		90	70-130			
Toluene-d8	47			ug/L	50.0		94	70-130			

Matrix Spike Dup (5K06029-MSD1)

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:35

Source: C511919-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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FINAL

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

Matrix Spike Dup (5K06029-MSD1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:35

Source: C511919-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	21		1.0	ug/L	20.0	0.091 U	103	71-117	4	16	
1,1,1-Trichloroethane	18		1.0	ug/L	20.0	0.15 U	91	72-143	0.9	18	
1,1,2,2-Tetrachloroethane	18		1.0	ug/L	20.0	0.085 U	92	59-133	0.4	16	
1,1,2-Trichloroethane	20		1.0	ug/L	20.0	0.068 U	100	67-118	5	18	
1,1-Dichloroethane	19		1.0	ug/L	20.0	0.050 U	93	79-141	2	19	
1,1-Dichloroethene	16		1.0	ug/L	20.0	0.15 U	80	75-133	2	20	
1,1-Dichloropropene	19		1.0	ug/L	20.0	0.063 U	94	70-129	5	17	
1,2,3-Trichlorobenzene	18		1.0	ug/L	20.0	0.25 U	92	62-117	9	17	
1,2,3-Trichloropropane	19		1.0	ug/L	20.0	0.15 U	93	58-140	6	17	
1,2,4-Trichlorobenzene	15		1.0	ug/L	20.0	0.097 U	74	59-122	6	17	
1,2,4-Trimethylbenzene	23		1.0	ug/L	20.0	0.067 U	114	74-123	5	18	
1,2-Dibromo-3-chloropropane	18		1.0	ug/L	20.0	0.48 U	91	37-157	7	18	
1,2-Dibromoethane	19		1.0	ug/L	20.0	0.42 U	96	66-123	4	15	
1,2-Dichlorobenzene	20		1.0	ug/L	20.0	0.052 U	99	76-116	2	16	
1,2-Dichloroethane	17		1.0	ug/L	20.0	0.082 U	85	72-151	6	16	
1,2-Dichloropropane	17		1.0	ug/L	20.0	0.098 U	87	78-125	2	19	
1,3,5-Trimethylbenzene	22		1.0	ug/L	20.0	0.10 U	109	77-129	4	16	
1,3-Dichlorobenzene	21		1.0	ug/L	20.0	0.092 U	106	76-119	7	17	
1,3-Dichloropropane	18		1.0	ug/L	20.0	0.15 U	91	60-129	3	16	
1,4-Dichlorobenzene	21		1.0	ug/L	20.0	0.10 U	103	76-122	3	16	
2,2-Dichloropropane	20		1.0	ug/L	20.0	0.12 U	98	21-167	4	20	
2-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	110	73-135	4	16	
4-Chlorotoluene	22		1.0	ug/L	20.0	0.10 U	109	76-134	6	16	
4-Isopropyltoluene	23		1.0	ug/L	20.0	0.066 U	113	75-127	6	17	
Benzene	19		1.0	ug/L	20.0	0.050 U	96	81-134	1	17	
Bromobenzene	19		1.0	ug/L	20.0	0.13 U	95	72-115	0.9	17	
Bromochloromethane	18		1.0	ug/L	20.0	0.11 U	92	74-128	5	18	
Bromodichloromethane	19		1.0	ug/L	20.0	0.10 U	95	72-129	4	16	
Bromoform	18		1.0	ug/L	20.0	0.20 U	88	73-119	7	44	
Bromomethane	22		1.0	ug/L	20.0	0.28 U	108	38-189	5	27	
Carbon Tetrachloride	20		1.0	ug/L	20.0	0.082 U	100	68-142	0.3	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.069 U	103	83-117	1	16	
Chloroethane	22		1.0	ug/L	20.0	0.18 U	109	45-213	1	26	
Chloroform	18		1.0	ug/L	20.0	0.083 U	90	78-138	0.9	17	
Chloromethane	21		1.0	ug/L	20.0	0.050 U	104	56-171	0.6	28	
cis-1,2-Dichloroethene	16		1.0	ug/L	20.0	0.075 U	78	69-120	0.8	18	
cis-1,3-Dichloropropene	18		1.0	ug/L	20.0	0.073 U	88	63-125	2	17	
Dibromochloromethane	20		1.0	ug/L	20.0	0.067 U	99	73-117	3	16	
Dibromomethane	18		1.0	ug/L	20.0	0.13 U	90	76-124	5	15	
Dichlorodifluoromethane	23		1.0	ug/L	20.0	0.091 U	114	25-161	0.2	48	
Ethylbenzene	18		1.0	ug/L	20.0	0.10 U	92	68-124	4	16	
Freon 113	44		1.0	ug/L	40.0	0.35 U	109	0-200	0.4	25	
Hexachlorobutadiene	19		1.0	ug/L	20.0	0.15 U	96	63-114	4	19	
Isopropyl Ether	13		1.0	ug/L	20.0	0.21 U	65	70-130	5	30	QM-07
Isopropylbenzene	21		1.0	ug/L	20.0	0.13 U	106	81-136	2	16	
m,p-Xylenes	40		2.0	ug/L	40.0	0.18 U	99	79-121	2	16	
Methylene Chloride	16		2.0	ug/L	20.0	0.070 U	81	68-128	8	17	
Methyl-tert-Butyl Ether	13		1.0	ug/L	20.0	0.12 U	67	10-127	4	21	
Naphthalene	15		1.0	ug/L	20.0	0.086 U	76	50-127	7	19	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 5K06029 - EPA 5030B_MS - Continued

Matrix Spike Dup (5K06029-MSD1) Continued

Prepared: 11/06/2015 12:49 Analyzed: 11/06/2015 14:35

Source: C511919-04

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
n-Butyl Benzene	22		1.0	ug/L	20.0	0.074 U	112	68-126	5	15	
n-Propyl Benzene	23		1.0	ug/L	20.0	0.073 U	116	76-125	1	16	
o-Xylene	20		1.0	ug/L	20.0	0.088 U	102	71-125	0.5	15	
sec-Butylbenzene	23		1.0	ug/L	20.0	0.053 U	114	75-122	5	17	
Styrene	21		1.0	ug/L	20.0	0.082 U	104	73-120	3	23	
tert-Butylbenzene	21		1.0	ug/L	20.0	0.094 U	107	70-137	5	22	
Tetrachloroethene	21		1.0	ug/L	20.0	0.099 U	103	40-181	3	26	
Toluene	22		1.0	ug/L	20.0	0.053 U	108	71-118	2	17	
trans-1,2-Dichloroethene	18		1.0	ug/L	20.0	0.11 U	89	75-139	3	19	
trans-1,3-Dichloropropene	21		1.0	ug/L	20.0	0.080 U	107	62-152	3	16	
Trichloroethene	18		1.0	ug/L	20.0	0.13 U	91	75-115	1	18	
Trichlorofluoromethane	22		1.0	ug/L	20.0	0.15 U	111	68-183	1	22	
Vinyl chloride	23		1.0	ug/L	20.0	0.083 U	116	49-150	0.8	27	
Xylenes (Total)	60		1.0	ug/L	60.0	0.22 U	100	77-121	1	16	
4-Bromofluorobenzene	46			ug/L	50.0		93	70-130			
Dibromofluoromethane	44			ug/L	50.0		89	70-130			
Toluene-d8	46			ug/L	50.0		92	70-130			

Volatile Petroleum Hydrocarbons by GC - Quality Control

Batch 5K02020 - EPA 5030B

Blank (5K02020-BLK1)

Prepared: 11/02/2015 10:49 Analyzed: 11/02/2015 15:38

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	4.7	U	30.0	ug/L							
C9-C10 Aromatics	4.2	U	10	ug/L							
C9-C12 Aliphatics	10.0	U	30.0	ug/L							
2,5-Dibromotoluene (FID)	132			ug/L	100		132	70-130			QS-03
2,5-Dibromotoluene (PID)	130			ug/L	100		125	70-130			

LCS (5K02020-BS1)

Prepared: 11/02/2015 10:49 Analyzed: 11/02/2015 16:09

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	107		30.0	ug/L	120		89	70-130			
C9-C10 Aromatics	44		10	ug/L	40.0		109	70-130			
C9-C12 Aliphatics	111		30.0	ug/L	120		92	70-130			
2,5-Dibromotoluene (FID)	106			ug/L	100		106	70-130			
2,5-Dibromotoluene (PID)	110			ug/L	100		109	70-130			

LCS Dup (5K02020-BSD1)

Prepared: 11/02/2015 10:49 Analyzed: 11/03/2015 15:16

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
C5-C8 Aliphatics	105		30.0	ug/L	120		87	70-130	2	25	
C9-C10 Aromatics	43		10	ug/L	40.0		109	70-130	0.4	25	
C9-C12 Aliphatics	127		30.0	ug/L	120		106	70-130	13	25	
2,5-Dibromotoluene (FID)	105			ug/L	100		105	70-130			
2,5-Dibromotoluene (PID)	110			ug/L	100		109	70-130			

QUALITY CONTROL DATA

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 5K02032 - EPA 3005A

Blank (5K02032-BLK1)

Prepared: 11/02/2015 13:59 Analyzed: 11/04/2015 12:51

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	3.10	U	10.0	ug/L							

LCS (5K02032-BS1)

Prepared: 11/02/2015 13:59 Analyzed: 11/04/2015 12:55

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	204		10.0	ug/L	200		102	80-120			

Matrix Spike (5K02032-MS1)

Prepared: 11/02/2015 13:59 Analyzed: 11/04/2015 13:01

Source: C513219-05

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	203		10.0	ug/L	200	3.10 U	101	75-125			

Matrix Spike Dup (5K02032-MSD1)

Prepared: 11/02/2015 13:59 Analyzed: 11/04/2015 13:04

Source: C513219-05

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	204		10.0	ug/L	200	3.10 U	102	75-125	0.4	20	

Post Spike (5K02032-PS1)

Prepared: 11/02/2015 13:59 Analyzed: 11/04/2015 13:06

Source: C513219-05

Analyte	Result	Flaq	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Lead	0.199		0.0100	mg/L	0.200	-0.00127	99	80-120			

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
ND	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification".
P	Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QS-03	Surrogate recovery outside acceptance limits

[illegible][illegible]

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
		<i>[Signature]</i>	10/19/1030	<i>[Signature]</i>	10/20/1030
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		<i>[Signature]</i>	10/20/1100		
		Relinquished By	Date/Time	Received By	Date/Time
Cooler #'s & Temps on Receipt	5.8°C				
		Condition Upon Receipt			
		<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable			

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) **Preservation:** 1:69 H-HCl N-HNO₃ S-H₂SO₄ ND-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist.

**Project Special Provisions
Erosion Control**

STABILIZATION REQUIREMENTS:

(3-11-2016)

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 1, 2016 issued by the North Carolina Department of Environmental Quality Division of Water Resources. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING:

(East)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31

50#	Tall Fescue
10#	Centipede
25#	Bermudagrass (hulled)
500#	Fertilizer
4000#	Limestone

September 1 - February 28

50#	Tall Fescue
10#	Centipede
35#	Bermudagrass (unhulled)
500#	Fertilizer
4000#	Limestone

Waste and Borrow Locations

March 1 – August 31

75#	Tall Fescue
25#	Bermudagrass (hulled)
500#	Fertilizer
4000#	Limestone

September 1 - February 28

75#	Tall Fescue
35#	Bermudagrass (unhulled)
500#	Fertilizer
4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Serengeti
2 nd Millennium	Essential	Kalahari	Shelby
3 rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan Ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane Rz	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching

(East)

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of preformed scour holes, and in other areas as directed.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

March 1 - August 31

18#	Creeping Red Fescue
6#	Indiangrass
8#	Little Bluestem
4#	Switchgrass
25#	Browntop Millet
500#	Fertilizer
4000#	Limestone

September 1 - February 28

18#	Creeping Red Fescue
6#	Indiangrass
8#	Little Bluestem
4#	Switchgrass
35#	Rye Grain
500#	Fertilizer
4000#	Limestone

Approved Creeping Red Fescue Cultivars:

Aberdeen

Boreal

Epic

Cindy Lou

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the *Standard Specifications* and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Measurement and Payment

Native Grass *Seeding and Mulching* will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

TEMPORARY SEEDING:

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

FERTILIZER TOPDRESSING:

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

SUPPLEMENTAL SEEDING:

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

MOWING:

The minimum mowing height on this project shall be 4 inches.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones $\frac{3}{4}$ " and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

REFORESTATION:

Description

Reforestation will be planted within interchanges and along the outside borders of the road, and in other areas as directed. *Reforestation* is not shown on the plan sheets. See the Reforestation Detail Sheet.

All non-maintained riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species.

The entire *Reforestation* operation shall comply with the requirements of Section 1670 of the *Standard Specifications*.

Materials

Reforestation shall be bare root seedlings 12"-18" tall.

Construction Methods

Reforestation shall be planted as soon as practical following permanent *Seeding and Mulching*. The seedlings shall be planted in a 16-foot wide swath adjacent to mowing pattern line, or as directed.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: *Reforestation* shall be planted from November 15 through March 15.

Measurement and Payment

Reforestation will be measured and paid for in accordance with Article 1670-17 of the *Standard Specifications*.

RESPONSE FOR EROSION CONTROL:**Description**

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

Section	Erosion Control Item	Unit
1605	Temporary Silt Fence	LF
1606	Special Sediment Control Fence	LF/TON
1615	Temporary Mulching	ACR
1620	Seed - Temporary Seeding	LB
1620	Fertilizer - Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
1640	Coir Fiber Baffles	LF
SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed - Repair Seeding	LB
1661	Fertilizer - Repair Seeding	TON
1662	Seed - Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

Construction Methods

Provide an approved subcontractor who performs an erosion control action as described in the NPDES Inspection Form SPPP30. Each erosion control action may include one or more of the above work items.

Measurement and Payment

Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item of work.

Payment will be made under:

Pay Item

Response for Erosion Control

Pay Unit

Each

ENVIRONMENTALLY SENSITIVE AREAS:**Description**

This project is located in an *Environmentally Sensitive Area*. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the Environmentally Sensitive Areas identified on the plans and as designated by the Engineer. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

The Environmentally Sensitive Area shall be defined as a 50-foot buffer zone on both sides of the stream or depression measured from top of streambank or center of depression.

Construction Methods**(A) Clearing and Grubbing**

In areas identified as Environmentally Sensitive Areas, the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Article 200-1 of the *Standard Specifications*. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

(B) Grading

Once grading operations begin in identified Environmentally Sensitive Areas, work shall progress in a continuous manner until complete. All construction within these areas shall progress in a continuous manner such that each phase is complete and areas are permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in Environmentally Sensitive Areas will be just cause for the Engineer to direct the suspension of work in accordance with Article 108-7 of the *Standard Specifications*.

(C) Temporary Stream Crossings

Any crossing of streams within the limits of this project shall be accomplished in accordance with the requirements of Subarticle 107-12 of the *Standard Specifications*.

(D) Seeding and Mulching

Seeding and mulching shall be performed in accordance with Section 1660 of the *Standard Specifications* and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the Environmentally Sensitive Areas.

(E) Stage Seeding

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes that are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

Additional payments will not be made for the requirements of this section, as the cost for this work shall be included in the contract unit prices for the work involved.

MINIMIZE REMOVAL OF VEGETATION:

The Contractor shall minimize removal of vegetation within project limits to the maximum extent practicable. Vegetation along stream banks and adjacent to other jurisdictional resources outside the construction limits shall only be removed upon approval of Engineer. No additional payment will be made for this minimization work.

STOCKPILE AREAS:

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

ACCESS AND HAUL ROADS:

At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

WASTE AND BORROW SOURCES:

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices that may be required on a commercial borrow or waste site will be done at the Contractor's expense.

All offsite Staging Areas, Borrow and Waste sites shall be in accordance with "Borrow and Waste Site Reclamation Procedures for Contracted Projects" located at:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/ContractorReclamationProcedures.pdf

All forms and documents referenced in the "Borrow and Waste Site Reclamation Procedures for Contracted Projects" shall be included with the reclamation plans for offsite staging areas, and borrow and waste sites.

TEMPORARY DIVERSION:

This work consists of installation, maintenance, and cleanout of *Temporary Diversions* in accordance with Section 1630 of the *Standard Specifications*. The quantity of excavation for installation and cleanout will be measured and paid for as *Silt Excavation* in accordance with Article 1630-3 of the *Standard Specifications*.

CLEAN WATER DIVERSION:**Description**

This work consists of installing, maintaining, and removing any and all material required for the construction of clean water diversions. The clean water diversions shall be used to direct water flowing from offsite around/away from specific area(s) of construction.

Materials

Refer to Division 10

Item

Geotextile for Soil Stabilization, Type 4

Section

1056

Construction Methods

The Contractor shall install the clean water diversions in accordance with the details in the plans and at locations indicated in the plans, and as directed. Upon installation, the excavated material

shall be immediately stabilized as provided in Section 1620 of the *Standard Specifications*. Other stabilization methods may be utilized with prior approval from the Engineer.

Line clean water diversion with geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury top of slope geotextile edge in a trench at least 5" deep and tamp securely. Make vertical overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile.

Secure geotextile with eleven gauge wire staples shaped into a *u* shape with a length of not less than 6" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically.

Measurement and Payment

Silt Excavation will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*.

Geotextile for Soil Stabilization will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

Stabilization of the excavated material will be paid for as *Temporary Seeding* as provided in Section 1620 of the *Standard Specifications*.

Such price and payment shall be considered full compensation for all work covered by this section including all materials, construction, maintenance, and removal of the clean water diversions.

SAFETY FENCE AND JURISDICTIONAL FLAGGING:

Description

Safety Fence shall consist of furnishing materials, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary, or other boundaries located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland, endangered vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.

Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered outside or interior boundaries shall be delineated by stakes and highly visible flagging.

Materials

- (A) Safety Fencing

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb/ft of length.

(B) Boundary Flagging

Wooden stakes shall be 4 feet in length with a minimum nominal 3/4" x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence geotextile shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

(B) Boundary Flagging

Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Interior boundaries may be staked on a tangent that runs parallel

to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.

Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as *Construction Surveying*, except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.

Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(5) or Subarticle 802-2(F) of the *Standard Specifications*. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.

The Contractor shall be required to maintain alternative stakes and highly visible flagging in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item
Safety Fence

Pay Unit
Linear Foot

PERMANENT SOIL REINFORCEMENT MAT:

Description

This work consists of furnishing and placing *Permanent Soil Reinforcement Mat*, of the type specified, over previously prepared areas as directed.

Materials

The product shall be a permanent erosion control reinforcement mat and shall be constructed of synthetic or a combination of coconut and synthetic fibers evenly distributed throughout the mat between a bottom UV stabilized netting and a heavy duty UV stabilized top net. The matting shall

be stitched together with UV stabilized polypropylene thread to form a permanent three-dimensional structure. The mat shall have the following minimum physical properties:

Property	Test Method	Value	Unit
Light Penetration	ASTM D6567	9	%
Thickness	ASTM D6525	0.40	in
Mass Per Unit Area	ASTM D6566	0.55	lb/sy
Tensile Strength	ASTM D6818	385	lb/ft
Elongation (Maximum)	ASTM D6818	49	%
Resiliency	ASTM D1777	>70	%
UV Stability *	ASTM D4355	≥80	%
Porosity (Permanent Net)	ECTC Guidelines	≥85	%
Maximum Permissible Shear Stress (Vegetated)	Performance Bench Test	≥8.0	lb/ft ²
Maximum Allowable Velocity (Vegetated)	Performance Bench Test	≥16.0	ft/s

*ASTM D1682 Tensile Strength and % strength retention of material after 1000 hours of exposure.

Submit a certification (Type 1, 2, or 3) from the manufacturer showing:

- (A) the chemical and physical properties of the mat used, and
- (B) conformance of the mat with this specification.

Construction Methods

Matting shall be installed in accordance with Subarticle 1631-3(B) of the *Standard Specifications*.

All areas to be protected with the mat shall be brought to final grade and seeded in accordance with Section 1660 of the *Standard Specifications*. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Areas where the mat is to be placed will not need to be mulched.

Measurement and Payment

Permanent Soil Reinforcement Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which Permanent Soil Reinforcement Mat is installed and accepted. Overlaps will not be included in the measurement, and will be considered as incidental to the work. Such payment shall be full compensation for furnishing and installing the mat, including overlaps, and for all required maintenance.

Payment will be made under:

Pay Item

Permanent Soil Reinforcement Mat

Pay Unit

Square Yard

SKIMMER BASIN WITH BAFFLES:**(East)****Description**

Provide a skimmer basin to remove sediment from construction site runoff at locations shown in the erosion control plans. See the Skimmer Basin with Baffles Detail sheet provided in the erosion control plans. Work includes constructing sediment basin, installation of temporary slope drain pipe and coir fiber baffles, furnishing, installation and cleanout of skimmer, providing and placing stone pad on bottom of basin underneath skimmer device, providing and placing a geotextile spillway liner, providing coir fiber mat stabilization for the skimmer outlet, disposing of excess materials, removing temporary slope drain, coir fiber baffles, geotextile liner and skimmer device, backfilling basin area with suitable material and providing proper drainage when basin area is abandoned.

Materials

Item	Section
Stone for Erosion Control, Class B	1042
Geotextile for Soil Stabilization, Type 4	1056
Fertilizer for Temporary Seeding	1060-2
Seed for Temporary Seeding	1060-4
Seeding and Mulching	1060-4
Matting for Erosion Control	1060-8
Staples	1060-8
Coir Fiber Mat	1060-14
Temporary Slope Drain	1622-2
Coir Fiber Baffle	1640

Provide appropriately sized and approved skimmer device.

Provide Schedule 40 PVC pipe with a length of 6 ft. to attach to the skimmer and the coupling connection to serve as the arm pipe. For skimmer sizes of 2.5 in. and smaller, the arm pipe diameter shall be 1.5 inches. For skimmer sizes of 3 in. and larger, refer to manufacturer recommendation.

Provide 4" diameter Schedule 40 PVC pipe to attach to coupling connection of skimmer to serve as the barrel pipe through the earthen dam.

The geotextile for the spillway liner shall meet the following minimum physical properties for low permeability, woven polypropylene geotextiles:

Property	Test Method	Value	Unit
Tensile Strength	ASTM D-4632	315	lb.
Tensile Elongation (Maximum)	ASTM D-4632	15	%
Trapezoidal Tear	ASTM D-4533	120	lbs.
CBR Puncture	ASTM D-6241	900	lbs.

UV Resistance (% retained at 500 hrs.)	ASTM D-4355	70	%
Apparent Opening Size (AOS)	ASTM D-4751	40	US Std. Sieve
Permittivity	ASTM D-4491	0.05	sec ⁻¹
Water Flow Rate	ASTM D-4491	4	gal/min/ft ²

Anchors: Staples, stakes, or reinforcement bars shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12" - 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1" - 2" long head at the top with a 1" - 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Excavate basin according to the erosion control plans with basin surface free of obstructions, debris, and pockets of low-density material. Install temporary slope drain pipe and construct the primary spillway according to the Skimmer Basin with Baffles Detail sheet in the erosion control plans. Temporary slope drain pipe at inlet of basin may be replaced by Type 4 geotextile as directed. Construct the coir fiber baffles according to *Roadway Standard Drawings* No. 1640.01 and Section 1640 of the *Standard Specifications*.

Install skimmer device according to manufacturer recommendations. Install 4" Schedule 40 PVC pipe into dam on the lower side of basin 1 ft. from the bottom of the basin and according to the detail, and extend the pipe so the basin will drain. Attach a 6 ft. arm pipe to the coupling connection and skimmer according to manufacturer recommendations. The coupling shall be rigid and non-buoyant and not exceed a diameter of 4" and 12" in length. Attach the rope included with the skimmer to the tee between the vent socket and the tube inlet, and the other end to a wooden stake or metal post. Clean out skimmer device when it becomes clogged with sediment and/or debris and is unable to float at the top of water in skimmer basin. Take appropriate measures to avoid ice accumulation in the skimmer device. Construct a stone pad of Class B stone directly underneath the skimmer device at bottom of basin. The pad shall be a minimum of 12" in height, and shall have a minimum cross sectional area of 4 ft. by 4 ft.

Line primary spillway with low permeability polypropylene geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury edges of geotextile in a trench at least 5" deep and tamp firmly. If geotextile for the primary spillway is not one continuous piece of material, make horizontal overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile. Secure geotextile with eleven gauge wire staples shaped into a *u* shape with a length of not less than 12" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically. Geotextile shall be placed to the bottom and across the entire width of the basin according to the Skimmer Basin with Baffles detail. Place sealant inside basin around barrel pipe on top of geotextile with a minimum width of 6 in.

At the skimmer outlet, provide a smooth soil surface free from stones, clods, or debris that will prevent contact of the coir fiber matting with the soil. Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the details in the plans and as directed. Place anchors across the matting at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the matting 3 ft. apart.

All bare side slope sections of the skimmer basin shall be seeded with a temporary or permanent seed mix as directed and in accordance with Articles 1620-3, 1620-4, 1620-5, 1660-4, 1660-5 and 1660-7 of the *Standard Specifications*. Straw or excelsior matting shall be installed on all bare side slope sections immediately upon the completion of seeding and in accordance with Article 1631-3 of the *Standard Specifications*.

Measurement and Payment

Silt Excavation will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*, as calculated from the typical section throughout the length of the basin as shown on the final approved plans.

Geotextile for Soil Stabilization will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

Low Permeability Geotextile will be measured and paid for as the actual number of square yards measured along the surface of the spillway over which the geotextile is installed and accepted.

Coir Fiber Baffles will be measured and paid for in accordance with Article 1640-4 of the *Standard Specifications*.

___" *Skimmer* will be measured in units of each. ___" *Skimmer* will be measured and paid for as the maximum number of each size skimmer acceptably installed and in use at any one time during the life of the project. Barrel and arm pipe, cleanout, relocation and reinstallation of ___" *Skimmer* is considered incidental to the measurement of the quantity of ___" *Skimmer* and no separate payment will be made. No separate payment shall be made if ___" *Skimmer*, barrel and/or arm pipe(s) are damaged by ice accumulation.

Coir Fiber Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

Temporary Slope Drain will be measured and paid for in accordance with Article 1622-4 of the *Standard Specifications*.

Stone for Erosion Control, Class __ will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

Seeding and Mulching will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

Seed for Temporary Seeding will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

Fertilizer for Temporary Seeding will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

Matting for Erosion Control will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
__" Skimmer	Each
Coir Fiber Mat	Square Yard
Low Permeability Geotextile	Square Yard

TIERED SKIMMER BASIN WITH BAFFLES:

(East)

Description

Provide a tiered skimmer basin to remove sediment from construction site runoff at locations shown in the erosion control plans. See the Tiered Skimmer Basin Detail sheet provided in the erosion control plans. Tiered Skimmer Basins shall be installed in areas where topography creates a large elevation difference between the inlet and outlet of a single skimmer basin. Work includes constructing sediment basins, installation of coir fiber baffles, installation of temporary slope drain pipe, furnishing, installation and cleanout of skimmer, providing and placing stone pad on bottom of basin underneath skimmer device, providing and placing geotextile spillway liners, providing coir fiber mat stabilization for the skimmer outlet, disposing of excess materials, removing temporary slope drain pipe, coir fiber baffles, geotextile liner and skimmer device, backfilling basin area with suitable material and providing proper drainage when basin area is abandoned.

Materials

Item	Section
Stone for Erosion Control, Class B	1042
Fertilizer for Temporary Seeding	1060-2
Seed for Temporary Seeding	1060-4
Seeding and Mulching	1060-4
Matting for Erosion Control	1060-8
Staples	1060-8
Coir Fiber Mat	1060-14
Temporary Slope Drain	1622-2
Coir Fiber Baffle	1640

Provide appropriately sized and approved skimmer device.

Provide Schedule 40 PVC pipe with a length of 6 ft. to attach to the skimmer and the coupling connection to serve as the arm pipe. For skimmer sizes of 2.5 in. and smaller, the arm pipe diameter shall be 1.5 inches. For skimmer sizes of 3 in. and larger, refer to manufacturer recommendation.

Provide 4" diameter Schedule 40 PVC pipe to attach to coupling connection of skimmer to serve as the barrel pipe through the earthen dam.

The geotextile for the spillway liner shall meet the following minimum physical properties for low permeability, woven polypropylene geotextiles:

Property	Test Method	Value	Unit
Tensile Strength	ASTM D-4632	315	lb.
Tensile Elongation (Maximum)	ASTM D-4632	15	%
Trapezoidal Tear	ASTM D-4533	120	lbs.
CBR Puncture	ASTM D-6241	900	lbs.
UV Resistance (% retained at 500 hrs.)	ASTM D-4355	70	%
Apparent Opening Size (AOS)	ASTM D-4751	40	US Std. Sieve
Permittivity	ASTM D-4491	0.05	sec ⁻¹
Water Flow Rate	ASTM D-4491	4	gal/min/ft ²

Anchors: Staples, stakes, or reinforcement bars shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12" - 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1" - 2" long head at the top with a 1" - 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Excavate basins according to the erosion control plans with basin surface free of obstructions, debris, and pockets of low-density material. Install temporary slope drain pipe and construct the primary spillways according to the Tiered Skimmer Basin Detail sheet in the erosion control plans. Construct the coir fiber baffles according to *Roadway Standard Drawings* No. 1640.01 and Section 1640 of the *Standard Specifications*. Multiple upper basins, or Modified Silt Basins Type 'B' as labeled on the detail, may be required based on site conditions and as directed.

Install skimmer device according to manufacturer recommendations. Install 4" Schedule 40 PVC pipe into dam on the lower side of basin 1 ft. from the bottom of the basin and according to the detail, and extend the pipe so the basin will drain. Attach a 6 ft. arm pipe to the coupling connection and skimmer according to manufacturer recommendations. The coupling shall be rigid and non-buoyant and not exceed a diameter of 4" and 12" in length. Attach the rope included with the skimmer to the tee between the vent socket and the tube inlet, and the other end to a wooden stake or metal post. Clean out skimmer device when it becomes clogged with sediment and/or debris and is unable to float at the top of water in skimmer basin. Take appropriate measures to avoid ice accumulation in the skimmer device. Construct a stone pad of Class B stone directly underneath the skimmer device at bottom of basin. The pad shall be a minimum of 12" in height, and shall have a minimum cross sectional area of 4 ft. by 4 ft.

Line primary spillways with low permeability polypropylene geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury edges of geotextile in a trench at least 5" deep and tamp firmly. If geotextile for primary spillways is not one continuous piece of material, make horizontal overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile. Secure geotextile with eleven gauge wire staples shaped into a *u* shape with a length of not less than 12" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically. Geotextile shall be placed to the bottom and across the entire width of the basin according to the Tiered Skimmer Basin with Baffles detail.

At the skimmer outlet, provide a smooth soil surface free from stones, clods, or debris that will prevent contact of the coir fiber matting with the soil. Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the details in the plans

and as directed. Place anchors across the matting at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the matting 3 ft. apart. Place sealant inside basin around barrel pipe on top of geotextile with a minimum width of 6 in.

All bare side slope sections of the skimmer basin shall be seeded with a temporary or permanent seed mix as directed and in accordance with Articles 1620-3, 1620-4, 1620-5, 1660-4, 1660-5 and 1660-7 of the *Standard Specifications*. Straw or excelsior matting shall be installed on all bare side slope sections immediately upon the completion of seeding and in accordance with Article 1631-3 of the *Standard Specifications*.

Measurement and Payment

Silt Excavation will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*, as calculated from the typical section throughout the length of the basin as shown on the final approved plans.

Low Permeability Geotextile will be measured and paid for as the actual number of square yards measured along the surface of the spillway over which the geotextile is installed and accepted.

Coir Fiber Baffles will be measured and paid for in accordance with Article 1640-4 of the *Standard Specifications*.

___" *Skimmer* will be measured in units of each. ___" *Skimmer* will be measured and paid for as the maximum number of each size skimmer acceptably installed and in use at any one time during the life of the project. Barrel and arm pipe, cleanout, relocation and reinstallation of ___" *Skimmer* is considered incidental to the measurement of the quantity of ___" *Skimmer* and no separate payment will be made. No separate payment shall be made if ___" *Skimmer*, barrel and/or arm pipe(s) are damaged by ice accumulation.

Coir Fiber Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

Temporary Slope Drain will be measured and paid for in accordance with Article 1622-4 of the *Standard Specifications*.

Stone for Erosion Control, Class ___ will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

Seeding and Mulching will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

Seed for Temporary Seeding will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

Fertilizer for Temporary Seeding will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

Matting for Erosion Control will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
___" Skimmer	Each
Coir Fiber Mat	Square Yard
Low Permeability Geotextile	Square Yard

COIR FIBER WATTLES WITH POLYACRYLAMIDE (PAM):

Description

Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of coir fiber wattles, matting installation, PAM application, and removing wattles.

Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers	
Minimum Diameter	12 in.
Minimum Density	3.5 lb/ft ³ +/- 10%
Net Material	Coir Fiber
Net Openings	2 in. x 2 in.
Net Strength	90 lbs.
Minimum Weight	2.6 lbs./ft. +/- 10%

Anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle. The PAM product used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved PAM product for use in North Carolina.

Construction Methods

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Apply PAM over the lower center portion of the coir fiber wattle where the water is going to flow over at a rate of 2 ounces per wattle, and 1 ounce of PAM on matting on each side of the wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the coir fiber wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment

Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Polyacrylamide(PAM) will be measured and paid for by the actual weight in pounds of PAM applied to the coir fiber wattles. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide(PAM)*.

Payment will be made under:

Pay Item

Polyacrylamide(PAM)
Coir Fiber Wattle

Pay Unit

Pound
Linear Foot

WATTLE BARRIER:

(5-20-13)

1630

Description

Wattle barriers are tubular products consisting of excelsior fibers encased in natural or synthetic netting and used at the toe of fills or on slopes to intercept runoff. Wattle barriers are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation, maintenance and removing wattle barriers.

Materials

Wattle shall meet the following specifications:

Inner Material	100% Curled Wood (Excelsior) Fibers
Minimum Diameter	18"
Minimum Length	10 ft.
Minimum Density	2.9 lb./c.f.± 10%
Net Material	Synthetic
Net Openings	1" x 1"
Net Configuration	Totally Encased
Minimum Weight	5 lb./ft. ± 10%

Stakes shall be used as anchors. Provide hardwood stakes a minimum of 2-ft long with a 2" x 2" nominal square cross section. One end of the stake shall be sharpened or beveled to facilitate driving down into the underlying soil.

Provide staples made of 0.125" diameter new steel wire formed into a U-shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Align wattle barriers in an overlapping and alternating pattern. Excavate a trench the entire length of each wattle with a depth of 2" to 3" for the wattle to be placed. Secure wattle barriers to the soil by wire staples approximately every linear foot and at the end of each wattle. Install at least 4 stakes on the downslope side of the wattle with a maximum spacing of 2 linear feet, and according to the detail. Install at least 2 stakes on the upslope side of the wattle barrier according to the detail provided in the plans. Drive stakes into the ground at least 10" with no more than 2" projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

For wattle barriers used to reduce runoff velocity for large slopes, use a maximum spacing of 25 ft. for the barrier measured along the slope.

Maintain the wattle barriers until the project is accepted or until the wattle barriers are removed, and remove and dispose of silt accumulations at the wattle barriers when so directed in accordance with Section 1630 of the *Standard Specifications*.

Measurement and Payment

Wattle Barrier will be measured and paid as the actual number of linear feet of wattles installed and accepted. Such price and payment will be full compensation for all work covered by this provision, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the wattle barrier.

Payment will be made under:

Pay Item

Wattle Barrier

Pay Unit

Linear Foot

TEMPORARY ROCK SILT CHECK TYPE A WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM):**Description**

Temporary Rock Silt Checks Type A with Excelsior Matting and Polyacrylamide (PAM) are devices utilized in temporary and permanent ditches to reduce runoff velocity and incorporate PAM into the construction runoff to increase settling of sediment particles and reduce turbidity of runoff. Temporary Rock Silt Checks Type A with Excelsior Matting and PAM are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of Temporary Rock Silt Checks Type A, matting installation, PAM application, and removing Temporary Rock Silt Checks Type A with Excelsior Matting and PAM.

Materials

Structural stone shall be class B stone that meets the requirements of Section 1042 of the *Standard Specifications* for Stone for Erosion Control, Class B.

Sediment control stone shall be #5 or #57 stone, which meets the requirements of Section 1005 of the *Standard Specifications* for these stone sizes.

Matting shall meet the requirements of Excelsior Matting in Subarticle 1060-8(B) of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each Temporary Rock Silt Check Type A. The PAM product used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved PAM product for use in North Carolina.

Construction Methods

Temporary Rock Silt Checks Type A shall be installed in accordance with Subarticle 1633-3(A) of the *Standard Specifications*, Roadway Standard Drawing No. 1633.01 and the detail provided in the plans.

Installation of matting shall be in accordance with the detail provided in the plans, and anchored by placing Class B stone on top of the matting at the upper and lower ends.

Apply PAM at a rate of 4 ounces over the center portion of the Temporary Rock Silt Checks Type A and matting where the water is going to flow over. PAM applications shall be done during construction activities and after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM until the project is accepted or until the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM are removed, and shall remove and dispose of silt accumulations at the Temporary Rock Silt Checks Type A with Excelsior Matting and PAM when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment

Temporary Rock Silt Checks Type A will be measured and paid for in accordance with Article 1633-5 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Matting will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Polyacrylamide(PAM) will be measured and paid for by the actual weight in pounds of PAM applied to the Temporary Rock Silt Checks Type A. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide(PAM)*.

Payment will be made under:

Pay Item	Pay Unit
Polyacrylamide(PAM)	Pound

BORROW PIT DEWATERING BASIN:

(3-17-09) (Rev 3-2-11)

Description

Water discharge from borrow pit sites shall not cause surface waters to exceed 50 NTUs (nephelometric turbidity unit) in streams not designated as trout waters and 10 NTUs in streams, lakes or reservoirs designated as trout waters. For lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTUs. If the turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased.

Construct, maintain and remove earth embankments used to reduce turbidity from dewatering borrow sites. Work includes providing porous coir fiber baffle, filtration geotextile, stone and outlet structures; cleaning out, maintaining, removing and disposing of the borrow pit dewatering basin and all components; and reshaping, dressing, seeding and mulching the area.

Materials

Refer to Division 10

Item	Section
Riprap, Class A, B, 1, and 2	1042
Geotextile for Drainage, Type 2	1056
Coir Fiber Baffle	1640-2

Use suitable excavated materials, as specified in Sections 225, 230 and 240 of the *Standard Specifications* in the construction of earth embankments for borrow pit dewatering basins, except where otherwise specified.

Construction Methods

Construct borrow pit dewatering basins according to the detail in the erosion control plans, and at locations shown on Reclamation Plans or in areas as directed.

The volume of the borrow pit dewatering basin will be based on a 2 hour retention time. The pump rate shall not exceed 1,000 GPM. The Contractor, at his option, may use a greater retention time for managing turbidity.

The straight line distance between the inlet and outlet shall be divided to include a forebay chamber in the upper quarter cell. Install one porous coir fiber baffle across the full width of the basin to delineate the forebay chamber. Do not use earthen or rock baffle. Install filtration geotextile on the interior side slopes and the floor of the forebay.

The water pumped from the borrow pit into the dewatering basin shall be obtained from the top of the water column and shall be discharged into the forebay in a non-erodible manner.

The borrow pit dewatering basin outlet shall be a vertical non-perforated riser pipe or flash board riser attached with a watertight connection to a barrel that carries the water through the embankment.

Maintenance and Removal

Maintain the borrow pit dewatering basin, coir fiber baffle, and remove and dispose of silt accumulations in accordance with Article 1630-3 of the *Standard Specifications*. The Contractor may include a drain device for maintenance and removal at his discretion.

Remove the borrow pit dewatering basin once dewatering operations are completed. Grade, seed, and mulch the area after removal of the borrow pit dewatering basin in accordance with Section 1660 of the *Standard Specifications*. The area shall be stabilized with an approved groundcover before final acceptance of the site.

Measurement and Payment

No direct payment will be made for borrow pit dewatering basins with the exception of the work of silt removal during dewatering basin operation and the work of seeding and mulching after removal of the dewatering basin. All other work and materials required for installation, maintenance and removal of borrow pit dewatering basins shall be incidental to *Borrow Excavation*. Such price and payments will be full compensation for the work of constructing, maintaining and removing the borrow pit dewatering basin including, but not limited to, the construction and removal of the borrow pit dewatering basin; furnishing of the outlet structure, baffle, filtration geotextile, stone and optional drain devices; and removal of all such items once dewatering operations are completed.

Removal and disposal of silt accumulations during dewatering operations will be measured and paid at the contract unit price per cubic yard for *Silt Excavation* in accordance with Article 1630-4 of the *Standard Specifications*.

Grading, seeding, and mulching the area after removal of the borrow pit dewatering basin will be measured and paid at the contract unit price per acre for *Seeding and Mulching* in accordance with Section 1660-8 of the *Standard Specifications*.

IMPERVIOUS DIKE:**Description**

This work consists of furnishing, installing, maintaining, and removing an *Impervious Dike* for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed.

Materials

Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious geotextile.

Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

Measurement and Payment

Impervious Dike will be measured and paid as the actual number of linear feet of impervious dike(s) constructed, measured in place from end to end of each separate installation that has been completed and accepted. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, maintenance, and removal of the impervious dike.

Payment will be made under:

Pay Item

Impervious Dike

Pay Unit

Linear Foot

TEMPORARY PIPE FOR CULVERT CONSTRUCTION:**Description**

This work consists of furnishing, installing, maintaining and removing any and all temporary pipe used on this project in conjunction with the culvert construction.

Construction Methods

The Contractor shall install temporary pipe in locations shown on the plans in such a manner approved by the Engineer. The temporary pipe shall provide a passageway for the stream through the work-site. The minimum size requirements will be as stated on the erosion control plans.

Measurement and Payment

___" *Temporary Pipe* will be measured and paid for at the contract unit price per linear foot of temporary pipe approved by the Engineer and measured in place from end to end. Such price and payment will be full compensation for all work covered by this section including but not limited to furnishing all materials required for installation, construction, maintenance, and removal of temporary pipe.

Payment will be made under:

Pay Item

___" Temporary Pipe

Pay Unit

Linear Foot

COIR FIBER MAT:**Description**

Furnish material, install and maintain coir fiber mat in locations shown on the plans or in locations as directed. Work includes providing all materials, excavating and backfilling, and placing and securing coir fiber mat with stakes, steel reinforcement bars or staples as directed.

Materials**Item**

Coir Fiber Mat

Section

1060-14

Anchors: Stakes, reinforcement bars, or staples shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12" - 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1" - 2" long head at the top with a 1" - 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Place the coir fiber mat immediately upon final grading. Provide a smooth soil surface free from stones, clods, or debris that will prevent the contact of the mat with the soil. Unroll the mat and apply without stretching such that it will lie smoothly but loosely on the soil surface.

For stream relocation applications, take care to preserve the required line, grade, and cross section of the area covered. Bury the top slope end of each piece of mat in a narrow trench at least 6 in. deep and tamp firmly. Where one roll of matting ends and a second roll begins, overlap the end of the upper roll over the buried end of the second roll so there is a 6 in. overlap. Construct check trenches at least 12 in. deep every 50 ft. longitudinally along the edges of the mat or as directed. Fold over and bury mat to the full depth of the trench, close and tamp firmly. Overlap mat at least 6 in. where 2 or more widths of mat are installed side by side.

Place anchors across the mat at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the mat 3 ft. apart.

Adjustments in the trenching or anchoring requirements to fit individual site conditions may be required.

Measurement and Payment

Coir Fiber Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

No measurement will be made for anchor items.

Payment will be made under:

Pay Item

Coir Fiber Mat

Pay Unit

Square Yard

FLOATING TURBIDITY CURTAIN:**Description**

This work consists of furnishing a *Floating Turbidity Curtain* to deter silt suspension and movement of silt particles during construction. The floating turbidity curtain shall be constructed at locations as directed.

Materials

The curtain material shall be made of a tightly woven nylon, plastic or other non-deteriorating material meeting the following specifications:

Property	Value
Grab tensile strength	*md-370 lbs *cd-250 lbs
Mullen burst strength	480 psi
Trapezoid tear strength	*md-100 lbs *cd-60 lbs
Apparent opening size	70 US standard sieve
Percent open area	4% permittivity 0.28 sec-1

*md - machine direction

*cd - cross machine direction

In the event that more than one width of fabric is required, a 6" overlap of the material shall also be required.

The curtain material shall be supported by a flotation material having over 29 lbs/ft buoyancy. The floating curtain shall have a 5/16" galvanized chain as ballast and dual 5/16" galvanized wire ropes with a heavy vinyl coating as load lines.

Construction Methods

The Contractor shall maintain the *Floating Turbidity Curtain* in a satisfactory condition until its removal is requested by the Engineer. The curtain shall extend to the bottom of the jurisdictional resource. Anchor the curtain according to manufacturer recommendations.

Measurement and Payment

Floating Turbidity Curtain will be measured and paid for as the actual number of square yards of curtain furnished as specified and accepted. Such price and payment will be full compensation for the work as described in this section including but not limited to furnishing all materials, tools, equipment, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item

Floating Turbidity Curtain

Pay Unit

Square Yard

COMPOST BLANKET:

(8-23-17)

Description

This work shall consist of furnishing, installing, maintaining, and seeding a water permeable *Compost Blanket* to reduce soil erosion and sediment by promoting the establishment of vegetation on sandy soils where vegetation is difficult to establish.

Materials**Compost:**

Compost used for Compost Blankets shall be weed free and derived from a well-decomposed source of organic matter. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations, including time and temperature data indicating effective weed seed, pathogen, and insect larvae kill. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted. Test methods for the items below should follow USCC TMECC guidelines for laboratory procedures:

1. pH between 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost".
2. For seeded Compost Blankets, seed should be incorporated at the time of application in the entire depth of the compost blanket, at rates per foot, per square yard, or per acre, as acceptable to the engineer. The following particle sizes shall also be followed: 100% passing a 2" sieve; 99% passing a 1" sieve; minimum of 60% passing a ½" sieve. All other testing parameters remain the same. The seeding rates are generally similar or slightly higher than those used when considering application of seed via hydroseeding or other seeding methods.
3. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.
4. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.
5. A sample shall be submitted to the engineer for approval prior to being used and must comply with all local, state and federal regulations.

Construction Methods

1. Compost Blankets will be placed as directed. Unless otherwise specified, Compost Blankets should be installed at a minimum depth of 1".
2. The Compost Blanket shall be seeded at time of installation for establishment of permanent vegetation. The Engineer will specify seeding requirements.
3. Compost Blankets are not to be used in direct flow situations or in runoff channels.
4. The type and rate of seed, fertilizer and lime shall be in accordance with the Seeding and Mulching provisions of this contract and as directed.

Maintenance

1. The Contractor shall perform routine inspections and maintain the Compost Blanket in a functional condition at all times.
2. Where the Compost Blanket fails, it will be routinely repaired.
3. The Compost Blanket will be seeded on site, at rates and seed types as determined by the Engineer. Once vegetation is established, final seeding is not required.

Performance

1. The Contractor is responsible for establishing a working erosion control system and may, with approval of the Engineer, work outside the minimum construction requirements as needed.
2. Where the Compost Blanket deteriorates or fails, it will be repaired or replaced with a more effective approved alternative.

Measurement and Payment

The Contractor shall provide the Engineer with proof that a minimum 1" thick Compost Blanket has been applied after settling. This rate equals approximately 270 cubic yards of compost material per acre of application area. The Contractor shall supply satisfactory evidence that the specified amount of material has been effectively placed (i.e., truck load tickets).

Compost Blanket will be measured and paid for as the actual number of acres measured along the surface of the ground over which the Compost Blanket is installed and accepted.

Payment will be made under:

Pay Item

Compost Blanket

Pay Unit

Acre

CONCRETE WASHOUT STRUCTURE:

(12-05-16)

Description

Concrete washout structures are enclosures above or below grade to contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with wash out operations.

The concrete washout structure may include constructed devices above or below ground and or commercially available devices designed specifically to capture concrete waste water.

Materials**Item**

Temporary Silt Fence

Section

1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil thick geomembrane. If the

minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

Install temporary silt fence around the perimeter of the enclosure in accordance with the details and as directed if structure is not located in an area where existing erosion and sedimentation control devices are capable to containing any loss of sediment.

Post a sign with the words “Concrete Washout” in close proximity of the concrete washout area, so it is clearly visible to site personnel. Install safety fence as directed for visibility to construction traffic.

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/soil_water/details/

Alternate details for accommodating concrete washout may be submitted for review and approval.

The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity.

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate details are approved then those details will also be paid for per each approved and installed device.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item

Concrete Washout Structure

Pay Unit

Each

FABRIC INSERT INLET PROTECTION DEVICE (HIGH FLOW)

(6-29-17)

Description

This work shall consist of installing, maintaining, and removing *Fabric Insert Inlet Protection Device*, of the type specified, in inlet structures (catch basins, drop inlets, etc) in areas where asphalt or concrete may prevent the proper installation of a Rock Inlet Sediment Traps Type C, or as directed.

Materials

The product shall be a fabric inlet protection device composed of a fitted woven polypropylene geotextile double sewn with nylon thread suspended sack. The *Fabric Insert Inlet Protection Device* shall be manufactured to fit the opening of the catch basin or drop inlet or shall have a deflector to direct runoff from the curb opening into the fabric sack. The *Fabric Insert Inlet Protection Device* shall have a rigid frame or support system to support the loaded weight of the product. The product shall have lifting loops for removing the device from the basin and will have dump straps attached at the bottom to facilitate the emptying of the device. The *Fabric Insert Inlet Protection Device* shall have an overflow system to allow stormwater to enter the inlet structure and avoid ponding on the roadway when the device reaches capacity

The stitching shall meet the following physical properties:

Physical	Test Method	English
Average Wide Width Strength	ASTM D-4884	165 lb/in

The fitted filter assembly shall have the following physical properties:

Physical	Test Method	English
Grab Tensile	ASTM D-4632	255 x 275 lbs
Minimum Puncture Strength	ASTM D-4833	125 lbs
Mullen Burst	ASTM D-3786	420 PSI
Minimum UV Resistance	ASTM D-4355	70 %.
Flow Rate	ASTM D-4491	200 gal/min/ft ²
Apparent Opening	ASTM D-4751	20 US Sieve
Permittivity	ASTM D-4491	1.5 sec ⁻¹

Construction Methods

Strictly comply with manufacturer's installation instructions and recommendations. Maintenance shall include regular daily inspections and after each qualifying rain event. The *Fabric Insert Inlet Protection Device* shall be emptied, cleaned and placed back into the basin when it reaches 50% capacity or as directed.

Measurement and Payment

This work will be paid for at the contract unit price per *Fabric Insert Inlet Protection Device* of the type specified, complete in place and accepted. Such payment shall be full compensation for furnishing and installing the *Fabric Insert Inlet Protection Device* in accordance with this specification and for all required maintenance.

Maintenance of the device, cleanout and disposal of accumulated sediments shall be paid for by *Fabric Insert Inlet Protection Device Cleanout*.

Payment will be made under:

Pay Item	Pay Unit
Fabric Insert Inlet Protection Device	Each
Fabric Insert Inlet Protection Device Cleanout	Each

ZOYSIA GUARDRAIL AND MEDIAN SODDING:**Description**

This work consists of installing sod in areas adjacent to guardrail and guiderail sections and in vegetated medians in accordance with this section as shown on the plans and as directed. The sod shall be prepared in accordance with the requirements of Section 1664 of the *Standard Specifications* and the requirements of this provision.

Materials

Only "approved sod" (trade designation) consisting of 100% Meyer, El Toro, Crowne or Compadre Zoysia sod shall be used. The sod, machine cut to the supplier's standard "big roll" sod width (36" to 42") and length, shall be a 5/8" minimum depth, excluding top growth and thatch, at the time of cutting. Before cutting, the sod shall be uniformly mowed at a height of 3/4" to 1". Standard sod sections shall be sufficiently strong to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section.

The Contractor shall obtain a certificate or limited permit issued by the North Carolina Department of Agriculture and Consumer Services (1-800-206-9333) or (919-733-6932) stating that the sod has been found to be free of injurious plant pests.

Sod shall be delivered on site within 24 hours of being cut (harvested) and be covered by acceptable means during delivery. A certificate from the sod producer stating the date and time of sod cutting shall accompany the sod when it arrives at the project site.

The Contractor shall provide sufficient water to meet the requirements of this provision.

Construction Methods

(A) Soil Preparation

Remove litter and other debris. Mow and satisfactorily dispose of weeds or other unacceptable growth on the areas to be sodded.

Prior to beginning preparation of the soil to receive sod, all eroded, uneven and rough areas shall be contour graded and/or filled with soil as directed. The soil shall be scarified or otherwise loosened to a depth of not less than 3". Clods shall be broken and the top 2" to 3" of soil shall be worked into an acceptable soil bed by the use of soil pulverizers, drags, or harrows.

After soil preparation, lime and fertilizer shall be uniformly distributed by mechanical means and thoroughly mixed with the top 3" of the soil by disking, harrowing, or other approved methods.

The Contractor shall be responsible for taking sufficient soil samples - at least one sample per sodding area or mile, whichever is less - for testing by the North Carolina Department of Agriculture and Consumer Services, Agronomic Division, Soil Testing Section, to determine the soil pH and nutrient content. Samples shall be taken in the presence of the Engineer. Results shall be received by the Engineer directly from the North Carolina Department of Agriculture and Consumer Services.

Limestone: Based on these results the Contractor shall add limestone, if required, to bring the soil pH to 6.0 to 6.5. The amount of limestone to be applied will be approved by the Engineer prior to application.

Sulfur: Based on these results the Contractor shall add sulfur if the pH is greater than 7.0, to bring the soil pH to 6.0 to 6.5. The amount of sulfur to be applied will be approved by the Engineer prior to application.

Fertilizer: Fertilizer shall be 10-20-20 analysis and applied at a rate of 300 pounds per acre or as directed based on the NCDA Consumer Services soil analysis and recommendation.

Application of limestone, sulfur, and fertilizer will be considered incidental to the work of *Zoysia Guardrail and Median Sodding* and no direct payment will be made for such.

At the Engineers discretion, in lieu of an NCDA&CS soil report, the rates of lime and fertilizer per acre are as follows:

300#	10-20-20 Fertilizer
4000#	Limestone

The area shall then be harrowed, dragged, raked, or prepared by other approved methods which will give a lawn type finish. All trash, debris and stones larger than 1-½" in diameter or other obstructions that could interfere with the placing of the sod shall also be removed. The finished surface shall be moistened with water prior to placing the sod as directed.

(B) Sod Placement

Sod shall be installed during the dormant period from February 1 through April 15. Sod handling and placement shall be a continuous process of cutting, transporting and installing including repairing seams and voids. Sod shall always be installed within 36 hours after being harvested. Sod shall be watered within 2 hours of installation.

Install sod rolls approximately 12" or as close as practical from the post opposite the edge of pavement in shoulders and medians parallel to the direction of the guiderail or guardrail. The soil should be furrowed the approximate width and depth of the sod roll for placement. Sod big rolls width should be cut in half for placement behind guardrail. Sod installed in vegetated medians should be installed using the entire width of the big roll and installed offset a minimum of 3 feet from the edge of pavement or curb along one side of the median.

Any sod or portions of sod rejected by the Engineer during the initial placement shall be removed from the project and replaced with acceptable sod within 24 hours of notification. The Contractor shall cease any and all other placement of sod on the project until rejected sod has been replaced.

After sod has been placed, and staked where necessary, according to Section 1664 of the *Standard Specifications*, it shall then be rolled or tamped carefully and firmly by means acceptable to the Engineer to ensure proper soil contact. If rolled, roller shall have a minimum weight of 150 lb/ft of roller width. Use of rubber tired equipment to roll shall not be allowed. Metal staples, 12" long unless otherwise approved, shall be made of 11-gauge new steel wire so as not to bend when pinned or driven through the sod. Extreme care shall be taken to prevent the installed sod from being torn or displaced. After rolling or tamping the sod, it shall be watered uniformly and thoroughly with a minimum of 1" of water, 5.6 gallons per square yard, applied immediately after installation of sod. In no case shall the time interval between sod placement and initial watering exceed 2 hours. Water shall be placed to the required quantity through sequential passes to insure proper coverage and to prevent runoff. A minimum of ¼" should be placed on each pass.

(C) Maintenance

The Contractor shall be responsible for all watering and other maintenance (except mowing) as required to maintain the livability of the sod from installation until final acceptance, including monitoring the sod to ensure all watering and other maintenance is performed as required.

The Contractor shall be responsible for all watering and other maintenance required to maintain the livability and health of the sod from installation until completion of the 60-day observation

period. Additional water shall be applied as needed and as directed to maintain the livability of the sod. Each additional watering event shall be a minimum of 0.5" of water, 2.8 gallons per square yard, uniformly applied over the sodded area and may be placed in a series of passes to prevent runoff, with a minimum of ¼" on each pass.

Any sod or portions of sod rejected by the Engineer after placement, but prior to beginning the observation period, shall be removed from the project and replaced with acceptable sod. Satisfactory replacement of sod shall begin within 10 days of notification. Failure to replace and repair damaged or dead sod as directed may result in sanctions under Article 108-7 or Article 108-8 of the *Standard Specifications*.

(D) Observation Period

Sodding shall be inspected by the Roadside Environmental Field Operations Engineer to begin and end the 60-day observation period.

The Contractor shall maintain responsibility for the sod for a 60-day observation period beginning upon the satisfactory completion and acceptance of all work required in the plans or as directed. The Contractor shall guarantee the sod under the payment and performance bond in accordance with Article 109-10 of the *Standard Specifications*.

After the first 30 days of the 60-day observation period, the Contractor and Engineer shall meet to review the project and identify dead or damaged sod to be replaced. The Contractor, at no additional expense to the Department, shall satisfactorily replace any sod that is not in a living and healthy condition as determined by the Engineer. Replacement sod shall be furnished and installed in accordance with the same requirements as for initial sodding operation, except that the amounts of limestone, sulfur, and water may be readjusted as directed. Satisfactory replacement of sod shall begin within 10 days of notification. Failure to replace and repair damaged or dead sod as directed may result in sanctions under Article 108-7 or Article 108-8 of the *Standard Specifications*. Upon completion and acceptance of the sod repairs, the remaining 30 days of the observation period shall begin.

(E) Acceptance

At the end of the 60-day observation period, the sod furnished and installed under this contract must be in a living and healthy condition, as determined by the Engineer. Acceptance of sod will be either at the end of the 60-day observation period or at final acceptance of the project, whichever is later. The sod shall be weed free at time of final acceptance.

Measurement and Payment

Zoysia Guardrail and Median Sodding will be measured and paid for as *Sodding* in accordance with Article 1664-5 of the *Standard Specifications*.

Water will be measured and paid for in accordance with Article 1664-5 of the *Standard Specifications*.

SURFACE APPLICATION OF POLYACRYLAMIDE FOR TEMPORARY SOIL STABILIZATION:**Description**

Polyacrylamide (PAM) can aid in the temporary restraint of erosion and subsequent sediment loss by surface application practices. Supplementing conventional methods of temporary groundcover with flocculants enhances turbidity reduction and improves stabilization of disturbed areas. Application of PAM for surface stabilization is not shown on plans and should be installed as directed. Work includes furnishing materials and application of PAM in granular or liquid form.

Materials

The Polyacrylamide (PAM), shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the PAM will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized. The PAM product used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved PAM product for use in North Carolina.

Construction Methods

PAM shall be applied at a rate of 30 lbs per acre or as directed. The PAM may be applied in granular form or as a liquid form at a concentration of 0.13 oz/gal (1 gram/liter) or as directed with an equivalent amount of dissolved PAM for a rate of 30 pounds per acre. Broadcast spreaders or hydro-seeders may be used to spread the PAM flocculant evenly across exposed areas at the appropriate rate. Apply mixture to soil slopes, stockpiles, and/or other areas prior to temporary mulching or in conjunction with temporary seeding.

Measurement and Payment

Polyacrylamide(PAM) will be measured and paid for by the actual weight in pounds of PAM applied the soil. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the Polyacrylamide(PAM).

Payment will be made under:

Pay Item

Polyacrylamide(PAM)

Pay Unit

Pound

FLOCCULANT BLOCKS:

Description

Flocculant blocks are semi-hydrated polyacrylamides or other approved flocculants that in a formed gel used to reduce turbidity in construction stormwater runoff. The flocculant blocks are installed in ditches and pipes where runoff flows around the block releasing the flocculant into the water.

Materials

The flocculant block shall contain a minimum of 5 pounds of active Polyacrylamide (PAM), blended PAM, or other equivalent flocculant contained within a semi-hydrated state and formed into a gel block. Soil samples shall be obtained in areas where runoff from construction activities will originate, and from offsite material used to construct the roadway, and analyzed for the appropriate flocculant to be utilized. The active flocculant used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved flocculant product for use in North Carolina. The flocculant block should be formed around an internal skeleton or contained within a polypropylene mesh bag. The flocculant block will also have a rope or other means of attachment to secure to block in place.

Construction Methods

Flocculant blocks are not shown on the plans. Install the flocculant blocks in ditches, pipes, catch basins, drop inlets and other locations as directed. The block shall be secured to prevent movement during storm events. Locate the block in the runoff flow at a point near the origination in order to provide maximum mixing time. Blocks should be suspended above the base of the ditch or bottom of pipe in heavy sediment laden runoff. Stormwater runoff treated by flocculant blocks should be directed to sediment basins or special stilling basins. Flocculant blocks shall be removed and reinstalled if covered or buried with sediment.

Measurement and Payment

Flocculant Blocks will be measured and paid for by the actual number of blocks installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Flocculant Blocks*.

Payment will be made under:

Pay Item

Flocculant Block

Pay Unit

Each